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THE PRACTITIONER:

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A Monthly Journal

OF

THERAPEUTICS.

EDITED BY

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VOL. IV.

JANUARY TO JUNE.

421234
3.4.44

London :

MACMILLAN AND CO.

1870

LONDON :
R. CLAY, SONS, AND TAYLOR, PRINTERS,
BREAD STREET HILL.



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THE PRACTITIONER.

JANUARY, 1870.

Original Communications.

THE MINERAL WATERS OF IRELAND.

BY JOHN MACPHERSON, M.D.

I HAVE been struck with the largeness of the contingent furnished by Ireland to many home and foreign spas, and I have been so the more, because the virtues of many Irish wells were celebrated more than a century ago by Rutt, and by Ryan and Knox in more recent times. And not only were they mentioned in books; there was actually a very large resort to them, and they were visited by the gentry of the country. On this account I resolved this autumn to visit Ireland, and ascertain whether its springs had really come to be neglected, and, if so, whether they deserved such neglect. I was the more inclined to do so, because the ordinary explanation, that like other wells they had got out of fashion, was not quite a sufficient one. We talk of fashion in such matters, but on the whole there is no class of remedial agents, the employment of which has been so steady and constant. While a combination of circumstances has in ordinary practice led to the use of particular remedies and modes of treatment, being at one time very prevalent, and during another almost abandoned, most mineral waters, especially thermal ones, have enjoyed a steady popularity. The wells known to the English three centuries ago are at this day their most popular places of resort. Aix-la-Chapelle, Ems, Wiesbaden, Baden-Baden, Baden in Switzerland, Pfeffers, Bath, and Buxton,

have all maintained their reputation. And much of the same remark applies to cold mineral wells, though with more limitations.

Ireland abounds in sulphuretted hydrogen, in chalybeate, and in sulphuro-chalybeate wells. They are not generally strong, though they are pure of their kind. Indeed the absence of salts, even of earthy ones, in any quantity, is remarkable. And Ireland appears to possess no waters containing enough of common salt, or of Glauber or Epsom salts, to make them in the slightest degree aperient.

Perhaps a few preliminary observations on sulphur and chalybeate wells may save some repetition in the account of particular spas.

Sulphur Wells.—It is not a little singular, considering how popular sulphur wells have always been, that of the absolute action on the system of the small quantities of sulphuretted hydrogen they contain, scarcely anything is known. This is probably due to two causes: to the want of minute clinical observation of the cases of patients using such waters; and to the fact that it is quite the exception, unless in the Pyrenees, when sulphur springs do not contain, in addition to their sulphur, salts in sufficient quantity to have a distinct action on the system. Lisdunvarna in Ireland, Gillsland in Cumberland, and Llanwrttyd in Wales, appear to be almost the only springs in Great Britain of any importance which are pure enough to make them fit for a study of the effects of sulphur waters when drunk, and even Llanwrttyd contains about eight grains of salt in the pint. Authors appear to agree pretty generally in attributing a few effects to sulphur waters, such as the following, but the accounts of their physiological action are very imperfect. They have very generally considered them stimulating to the system. They all agree that they are diuretic, and that after a time under their use the motions become dark and offensive, that the person after a time exhales a peculiar odour, and that articles of silver worn by a patient are apt to get tarnished. Foreign authors say that their continued use now and then brings out a slight rash. I have recently observed, in an account of a Scotch sulphur well, the following statement, which is quite novel!

“ We have frequently observed, during a course of the water,

the skin, especially of the hands, to become harder, and its cuticle to be shed in 'scurf.' Over the rest of the body the same process goes on, though rarely in an appreciable degree. On the face the action of the water is more that of a cosmetic. It has been observed by some who have taken the water extensively for some time, that on their underclothing being shaken over a fire, the impurities derived from the skin have burned with a blue colour, like particles of the flowers of sulphur—a somewhat extraordinary fact, which proves at once the strong impregnation of the water and its relation to the skin."

With respect to the therapeutic effects of sulphur waters, the universal belief at English and at most foreign wells is that they are useful in chronic rheumatism and gout, in some forms of dyspepsia, and specific in all cutaneous complaints. Their use in liver affections is also advocated at home and abroad; but a favourite use of them abroad (generally heated), in case of bronchial and laryngeal irritation and in phthisis, is not usual in Great Britain. The Moffat authorities long ago said, that the use of their waters was contra-indicated in cases of cough or of threatened tuberculosis; and at Strathpeffer, "visitors who may come to the spa with symptoms of consumption are at once cautioned by the people of the place from drinking the waters."

It may be well for purposes of comparison to give the amount of sulphuretted hydrogen in some British wells, but many of the analyses are old and obviously not trustworthy.

Amount of sulphuretted hydrogen in cubic inches to the imperial pint:—

Lisdonvarna	5
Moffat	53
Strathpeffer	140
Llanwrtyd	62
Llandrindod	35
Gillsland	21
Harrogate	53

Chalybeates.—Much need not be said here about the action of chalybeates; it is pretty well understood. Experiments would seem to show, that the average amount of iron in the human system is about 70 grains; that about 1 grain of metallic iron is taken in daily from our food, and the same amount excreted. So far then as the exhibition of iron is intended merely to restore

the normal proportion of iron to the blood, a very small quantity is sufficient, especially if presented to the system in a form in which it is readily taken up. Weak chalybeates may therefore be more important agents than one would have supposed, especially if they contain carbonic acid, which aids the assimilation of the iron; but unfortunately all British springs are deficient in their supply of this gas. The following table shows the amount of carbonate of iron in various springs in the pint. I may say that carbonate of iron may be considered to represent one-half the same quantity of metallic iron—*i.e.* that 1 grain of carbonate contains about half a grain of iron.

	Grains.
Tunbridge Wells	0·39
Lisdunvarna	0·4
Llandrindod, variously	0·77 or ·14
Ballynahinch	0·3
Harrogate (Kissingen)	0·373
„ Tewit	0·16

I have purposely omitted the stronger chalybeates. Of the foregoing, Tunbridge Wells, Lisdunvarna, and the Tewit well, Harrogate, are specimens of pure chalybeates. The others contain very considerable amounts of common salt, or of sulphuretted hydrogen.

If the following remarks shall appear to be very general and deficient in detail, I must plead the difficulty of obtaining accurate information, where there are no resident medical officers. One is obliged to be satisfied with general impressions. All that can often be ascertained is, that certain patients have gone to certain wells and have benefited by using them, or have failed to do so. How much is attributable to change of air and of mode of life, and how much to the use of the waters, is always difficult to determine, and the more so when the wonder-cure element is introduced—a subject, by the way, well worthy of the consideration of the *Practitioner*. At every well, one is called on to believe the most miraculous cures of patients, who have been affected with diseases of years' standing, who have been treated by doctors at home and abroad, at spas foreign and domestic, and have never obtained relief till they came to the particular place which they have found to suit them. To credit such cures, requires the ample faith of those who believe that the famous Watford bone-

setter makes up for the deficient skill of our first London surgeons. It is the old story of "*vulgus vult decipi*"—the honest practitioner will not say "*et decipiatur*"—but assuredly, whether he says it or not, "*vulgus decipitur*" in such matters to the end of time.

Ballynahinch wells lie about two miles from the town of that name, which is readily reached by rail in an hour from Belfast. I found here two wells, the chief one a sulphur chalybeate, believed to contain 0.158 of oxide of iron in the 10,000 grains (the water must be very pure, for Dr. Kane found only 3.21 of solid contents in 10,000 grains), and another less used called the chalybeate, but believed not to contain any iron. The quality of the water of the principal well unfortunately varies, owing to soakage water at times reaching it from some neighbouring boggy ground. The first was not unpleasant to drink, after the sulphur taste was got over, and it does not contain much sulphuretted hydrogen; the second was tasteless. These two wells have pump-rooms built over them, and a patent pump, through which the water is supplied. There is also a small neglected bath-house, where baths of the sulphur-water can be had. The place is kept in very fair order; there are walks and rows of trees, and some slips of planting, also a maze. The country is hilly and agreeable, and there are pleasant walks in some neighbouring gentlemen's grounds. There are hills of moderate height in the neighbourhood; and some of the most picturesque in Ireland, the Slieve Donard range, with good sea-bathing at Newcastle, are about ten miles off. There are a small reading-room—in which in the forenoon I found a solitary lady—and a fair hotel; but visitors usually take lodgings in farmhouses, some thirty of which are in the neighbourhood. Altogether the place offers considerable inducements to those who are satisfied with country air and a very quiet mode of life, and who are likely to derive benefit from the use of a mild chalybeate. It is needless to say what are the indications for resort to such a place. Knox talks of Ballynahinch being the most crowded spa in Ireland; but the resort to it must have fallen off very considerably since the date of his book, although a good many people from the north of Ireland, and especially from Belfast, still visit it.

Half a pint of the sulphur or chief well twice daily is the

proper dose to commence with, the quantity to be gradually increased; it is not aperient. When I was there, I was assured that there was a gentleman taking sixteen tumblerfuls of it before breakfast. The Ballynahinch well must be considered a feeble sulphur chalybeate, unless fresh analysis should show its solid or gaseous constituents to be more abundant.

Swanlinbar is a small village in a picturesque enough country, eight or ten miles from Enniskillen. It has several wells in its neighbourhood, all impregnated with sulphuretted hydrogen. The chief well is about a mile out of the village on the other side of the stream. It has a shed over it, and is tolerably clean; but there is no sort of well establishment, and I had to borrow a glass from a neighbouring cottage. Although *Swanlinbar* has the reputation of being the strongest sulphur well in Ireland (there is no analysis of it; it is evidently very free from solid constituents), Knox merely represents it as moderately impregnated with sulphuretted hydrogen. There are at least three other sulphur wells in the immediate neighbourhood, some said to smell more powerfully than the chief well. These wells are no doubt pure sulphur springs, and produce the effects to be expected from such waters, as well now as they did in former days, when *Swanlinbar* was a fashionable place, and when Swift tortured his wit in a play upon its name. I was credibly informed that in the beginning of this century the place was so crowded, that people at times had to sleep in their carriages in default of accommodation. I cannot indeed see, although there are some houses of a better class, now in a state of decay, how any large number of people could have found shelter here. There is a respectable village inn, but no accommodation for strangers; but it really is not wanted, for I could hear of no one drinking the water this year, except two ladies from Dublin. There are various objects of interest in the neighbourhood among the limestone mountains, which here, as in most countries, have been curiously worn by water; also the woods of Florence Court. In short, although *Swanlinbar* has the credit of being rather a damp place (and I saw it on a wet day), yet if the waters were more powerful, it might easily be made a place of some attraction to visitors; but I see no prospect of the revival of its former fame, for it is doubtful whether its springs are superior to many others of the same class.

Lisdunvarna, at this moment the only popular spa in Ireland, has been known for more than a century, but it is only within the last few years that it has become so well known. It is about twenty miles from Ennis, or any other point on the railway from Athenry to Limerick, and is usually reached by the public outside car from Ennis. It is situated in a bare open country, with low hills in the neighbourhood, not rising except in the distance to the height of mountains. They are all of limestone, and they yield a green pasturage; but in some places, not more than a couple of miles distant from the station, they are so bare, that there is scarcely room for a few blades of grass to grow. An old writer said that in this district "you will not find water enough to drown a man, or wood enough to hang him, or earth enough to bury him with." The air is counted wonderfully pure, and dry, considering that it is in the west of Ireland, and little more than three miles from the sea. A small stream runs through the place and has burrowed deeply among the limestone rocks, producing small ravines, which by the aid of planting might afford shaded walks and some variety to the visitors at the spa. As it is, everything is rough and unfinished, and one would never from its appearance dream that it is a place of considerable resort. Engineers have mapped out terraces and churches and assembly rooms, but these things are in the future, and I should say a very distant one, while funds are wanting, and the two landlords to whom the place and the wells belong, seem not inclined to come forward liberally.

The well most used at *Lisdunvarna* is the sulphur one near the bridge, close to the banks of the small stream. A small pump-room has been built over it by the proprietor, and the water is served out from an artificial pump. I went there after some heavy rain—bog-water had got into the well—and I saw only muddy water devoid of all smell of sulphur. I believe that this is by no means the first time that this accident has occurred. Those who were drinking sulphur water, had to repair down a muddy bank under the Protestant church, to two little excavations in the rock, like two hand-basins placed side by side, and within a foot or two of the swollen stream already mentioned. One of these little basins produces a strong sulphurous water; the other, a pure chalybeate, entirely free from all trace

of sulphur. It is a very pretty sight, and I was only sorry to see the place so neglected; no shed, no women to serve out the water; not room for a dozen people to stand between the well and the stream. Returning to the centre of the station, I visited the two original chalybeate springs. All three chalybeates are very pure, as appears from the accompanying analysis:—

PROFESSOR APJOHN'S ANALYSIS OF CHALYBEATES: GRAINS PER PINT.

	No. 1.	No. 2.	No. 3.
Silex	·14	·015	·16
Alumina	trans.	trans.	trans.
Carb. of Iron	·39	·28	·23
„ Lime	1·2	·5	2·4
„ Magnesia	·06	·04	·08
Sulphate of Lime	·76	·41	·62
„ Magnesia	·33	·68	·61
„ Potash	·06	·12	·05
Chloride of Sodium	·52	·48	·51
Organic Matter	·13	·07	·11
	3·59	2·69	4·81

One of these chalybeates is called the magnesian, just as improperly as I heard it said, that the soil of the place was full of copper. There were small coverings over these wells, but all around them was muddy. These were the chief wells; one other sulphur well has, I believe, been abandoned; and another, called the copperas well, is used only externally, and is said to be very weak.

We thus have at Lisdunvarna good sulphur springs of no great strength, and tolerably strong and pure chalybeates. Though there is no reason to believe that these wells are very remarkable in any way, yet it is evident that they afford elements which, if used judiciously, may, in conjunction with the pure bracing air of the west, be very useful as tonics to the system, particularly to such cases as can stand a little roughing, or to such hysterical cases and others as may be the better for roughing it. Chronic gout and rheumatism, dyspepsia, skin affections, and various forms of chlorosis and anæmia, are the classes of cases which are found to benefit most by the waters of Lisdunvarna. Many patients come to them year after year. One

gentleman who had seen a good deal of the world, and been in its various quarters, told me that he was there for the ninth time, and that he could not omit an annual visit without his health suffering. He considered a visit to Lisdunvarna an excellent prophylactic against gout, as many patients do a visit to Buxton.

Dr. Fawcett, who has brought all the latest information about Lisdunvarna together in his pleasantly written pamphlet, says that the quantity taken of the sulphur water by each patient is about two tumblerfuls thrice daily. The usual period of sojourn at the well is about three weeks, and the usage is to drink the sulphur springs for a fortnight, and then the chalybeates for a week; but there is no resident physician to prescribe; patients either follow the directions from their own doctors that they have started with, or follow the advice of other patients.

To those who enjoy moving about, there are various objects of interest at some distance, to be reached by car. The lofty black rocks of Moher, about 600 feet high, are a magnificent sight, even when the Atlantic is smooth; and the different points of view are commanded by plateaux ingeniously constructed on the edge of the cliff. The barren terraces of limestone at the Black Head or at the corkscrew descent to Ballyveay are unique, and different from anything of the kind to be seen in the British Isles; and last not least, a considerable variety of ferns and rare plants are to be found on the neighbouring hills, the collecting of which appeared to make an agreeable variety in the life of the visitors.

The accommodation is very indifferent. I was told that there were good lodging-houses. There is only one hotel, and it had little to recommend it, except the general *bonhomie* of its inmates. Priests were abundant, and inclined to be sociable. The food was good enough, but coarsely served. Although the press of visitors was over, I was put into a bedroom which was a sort of anteroom to two other bedrooms inside. My bed was an old sofa. I had two chairs with broken backs, and was not allowed a tumbler with my washing things. There is therefore need for improvement in every way, to make Lisdunvarna an agreeable place of residence; yet it was stated to me, that at one time during this season there were as many as 1,200 people congregated. Though therefore I do not think that Lisdunvarna will ever attract any visitors

except natives of the country, it is absolutely necessary, if it is to maintain its present repute, that all its arrangements should be improved; and it is highly desirable both that a competent medical officer on the spot should study the effects of the waters, and that we should have fresh and complete analyses of the springs.

I may next say a few words about some of the decayed wells, which I did not visit, but which I inquired about.

The sulphuretted wells of Lucan, near Dublin, which were once crowded, and have pump-rooms and public rooms, and are situated in a pretty country, appear to be quite forgotten, but without any good reason.

The Killymard sulphur well near Donegal, once used pretty extensively, is very little resorted to.

The Kilkenny chalybeate spas of Johnstown and Brownestown, once in favour and written up by Dr. Ryan, are quite forgotten. The hotel built at the former is now in ruins.

The chalybeates at Castle Connel, near Limerick, in beautiful scenery, are now scarcely known, though said to contain 0·39 of peroxide of iron in the pint. There are many sulphur wells of some local repute, a great many near Loch Earne. A strongly sulphuretted water was brought me from Krevenish; and there are many chalybeates of various strength in all corners of Ireland; some of them I saw near Cootehill.

Before concluding this survey of the Irish spas, I may be allowed to say a word or two about the only thermal source in that country, Mallow, although I have merely passed through it two or three times by rail. It lies on the line from Dublin to Cork, where it branches off to Killarney. It appears to me to be far the most desirable inland place of residence for invalids in Ireland. It has very nearly as mild a winter climate as that of Cork and Penzance, and from the middle of February to the end of April, owing to being sheltered from the east winds to which Cork is exposed, it is considered an excellent place for pulmonary cases. The country around is picturesque, and there are excellent houses. The pump-room and everything about the spring is kept in excellent order. Formerly the place was in great repute, and called the Irish Bath. Its spring is abundant, at a temperature varying from 66° to 72°. It is singularly pure water—the mineral contents very small—but there is a great abundance of

nitrogen gas, probably as much as is present in the waters of Buxton. While the nature of the action of nitrogen on the system is quite unknown, it is curious to find, that the warm nitrogen waters have been considered elsewhere particularly useful in phthisis, and, like other indifferent warm waters, beneficial in some forms of dyspepsia. Such waters are commonly used abroad, as at Lippe and Paderborn, for the purposes of inhalation. Mallow has also some chalybeate springs in its neighbourhood.

Holy wells are so numerous in Ireland that I had the curiosity to visit two of them ; both of them were quite tasteless, so that their virtue lay in their sanctity. At the first, near Liscanor, there were the usual stations of Catholic places of pilgrimage. I only found one boy, who had been drinking and performing his devotions for a fortnight ; he was suffering from chronic ophthalmia tarsi, and was rather desponding, and could not say that he was much better, and no wonder in so obstinate a complaint. The other well was at Ardmore, in the south of Ireland. You drink the water and wish for your cure, and must walk three times round the ruins of an adjacent chapel, but with, not against, the sun. I was interested in a very obstinate case of deep-seated inflammation of the eyes, which had resisted various modes of treatment. I wished for the improvement of the case, and sure enough, within a week, when I had occasion to see the patient, there was marked improvement, which continued. If this was not *propter hoc*, at all events it was *post hoc*, and is not a bad illustration of the sources of popular belief in such cures. Many English springs, called eye-wells, have probably no higher claims to be considered efficacious.

The general result of my inquiry is, that Ireland has fair chalybeates and sulphur wells ; but none—unless more complete chemical analysis shall detect them—of any great importance, or likely even in happier days to attract the notice of strangers.

No better proof of the deficiency in mineral constituents of the Irish spas can be found than in the recommendations of the first and last writers on the Irish spas that I have come across.

Dr. Dellon in 1684, in his notice of the feeble chalybeate of Chapelyzod, near Dublin, proposes a way of improving by art

weakly impregnated mineral waters; and Dr. Fawssett, in his recent account of Lisdunvarna, suggests the addition of aperient powders to make its waters laxative, and of carbonic acid to make them palatable.

On the whole, bathing forms a very small portion of the treatment at any of the Irish spas. I regret on this account that I did not hear till just before leaving Ireland, and when I was unable to visit it, of what is called Bathing Bay, in Lough Neagh. It is in the south-western angle of that large inland sea. Four or five sulphur springs run into it there, and probably impregnate a small angle of the loch. On this account the natives have much faith in its curative effects, especially in scrofula. They used to bathe in it, just as the natives of Bengal bathe in the sulphur tanks of Buklesir; the heat of the water there, however, forming an additional attraction. A very remarkable fact in the history of this Lough Neagh water is that, towards the close of the last century, such faith in its power over scrofula had the Rev. Dr. Lill, that he bequeathed a sum of money for the maintenance of a hospital at Washing Bay. But the wishes of the testator were neglected, the value of the property he left became deteriorated, and eventually the funds were diverted to the nearest county hospital, that of Armagh. It was long thought that the waters of Lough Neagh, like those of Knaresborough, once a popular spa, possessed petrifying properties, but the petrified wood which is still found in it is probably fossil.

Besides bathing in Lough Neagh, the Irish have also bathed themselves and their horses in the bituminous mud of Lough Leigh, or Loughlinlea, a small loch in the hills between Kingscourt and Baillieborough, in county Cavan, where also are chalybeate springs. They seem also to smear the affected parts with the mud, and we have thus a distinct specimen of *lutation*, and the first step towards the mud and peat baths now so popular on the continent of Europe, and for the employment of which Ireland supplies such ample means, if any encouragement were offered.

Another process well known in other parts of the world, Dr. Stokes, of Dublin, has been good enough to inform me, was at one time extensively practised at Tramore, near Waterford,—

that of *arenation* ; that is, of covering the body of the patient with the sand of the sea-shore.

But if Ireland is poor in mineral waters, it can vie with any country in its sea-bathing places all round its coasts. Most of them I have enumerated elsewhere,¹ and shall only add two or three which I then overlooked : Miltown Malbay, not far from Lisdunvarna, and the two great southern watering-places near Waterford—Dunmore, the resort chiefly of the wealthier, Tramore of the poorer classes. The latter is crowded every season. Dr. Stokes informs me that among the popular cures in Ireland was that called “the sick boat.” At Tramore every morning a huge flat-bottomed boat received a cargo of patients at the charge of a halfpenny each. It was generally crowded, and remained at anchor in the swell of the sea for ten or twelve hours, so that the full benefits of the sea-sickness were procured. This, though it may have been entitled to be noticed here as a seaside cure, has no right to be mentioned among mineral water cures, for I am not aware that any such waters, however nauseous, have been used as emetics. The Irish bathing-places are very fairly supplied with hot and cold baths, also with boxes for dressing in ; regular machines drawn up and down are not common. The chief defect in such places is bad hotels ; but in some places, as Port Rush, Newcastle, Kilkee, Miltown Malbay, and Tramore, they are good.

However, improvements are wanted in most places. I had occasion during the same week to sit down at an Irish *table d'hôte*, where German waiters and artificial flowers scarcely made up for starved fowls and stringy mutton ; and at a commercial hotel in Buxton, where the solid good feeding, served up with no show, was almost oppressive. And the contrast among the guests was equally strong. In person the Irish guests were much less bulky than the English ones. Surely the burly Englishmen, with their buxom dames, who made such a serious business of their eating, had not come to Buxton to seek relief for overworked stomachs or livers ?

¹ “Baths and Wells of Europe,” 1869.

ON THE EMPLOYMENT OF DIGITALIS IN DISEASES OF THE HEART.

BY SYDNEY RINGER, M.D.

THE beneficial effects of digitalis on some complaints of the heart are most striking, but still much uncertainty as to the precise diseases which are amenable to this remedy appears to be generally experienced. It is with the hope of removing in some degree this uncertainty that the following paper is written.

Its good effects are most apparent in cardiac dropsy ; but it is not suited to all forms of this disease, for the heart complaint, on which dropsy may depend, is not always of the same kind. Thus the dropsy may be due to dilatation of the ventricles, or to some disease where this is not present. Moreover the dilatation may be limited to the right, or may be most marked in the left ventricle. If on the right side, it may be owing to obstruction to the free passage of the blood, as in the lungs from emphysema and bronchitis, which obstruction causes the right ventricle to become engorged, and so distended that its valves are made incompetent, and tricuspid regurgitation with its consequent, dropsy, results. Or the dilatation may be mainly or entirely limited to the ventricle of the left side, and be due to aortic or mitral disease, or to both. Further, there by no means uncommonly occurs extreme dilatation, with a good deal of hypertrophy of the left ventricle, with a murmur having the characters of a mitral regurgitant one, without the existence of any disease of either the mitral or aortic valves. With all these and some other forms of heart disease extreme general dropsy may occur ; but it is in the highest degree important to recollect that digitalis is not equally capable of doing good in all these different diseases, and that a careful discrimination must be made, or the

employment of this drug will very often lead to great disappointment to the practitioner, and it may be harm to the patient. For digitalis, while able in some forms of heart disease to remove most of the symptoms, even when these are of the gravest character, can accomplish little or nothing in the other forms.

It is now proposed to pass in review those kinds of heart disease which may be benefited by digitalis, and also those which are but little if at all influenced for good by this medicine.

With a patient presenting the following symptoms and physical signs digitalis will be found of eminent use. There is present dropsy, which may be extensive; the breathing is much distressed, in the earlier stages of this disease only periodically, and is so especially at night; but when the disease is at its worst it is continuously bad, although it becomes paroxysmally worse. The patient cannot lie down in bed,¹ and is perhaps obliged to sit in a chair with the head either thrown back, or more rarely leaning forward on the bed or some other support. The jugular veins are distended and may feel sore, and the face is dusky and livid. The pulse is very frequent, feeble, fluttering, and irregular. The urine is very scanty, high-coloured, and deposits copiously on cooling. The heart is seen and felt to beat over a too extensive area; and the chief impulse is sometimes at one spot of the chest and sometimes at another. The impulse is undulating, and the beating very irregular and intermittent. The physical examination betrays great dilatation of the left ventricle, with often a not inconsiderable amount of hypertrophy. There is mostly heard a murmur, having the characters of one produced by mitral regurgitant disease, and there may also be disease of the aortic valves.

A case presenting these symptoms and physical signs will very generally respond quickly to digitalis, if given in the fol-

¹ These patients, and also those who suffer from much oppression of the breathing from other diseases of the heart, are often, on account of the dyspnoea, unable to sleep, and in consequence they become much exhausted and wearied out. By the hypodermic injection of small quantities of morphia (one-sixth or one-twelfth of a grain) the dyspnoea may be much quieted, and sleep more or less refreshing obtained. This treatment may be adopted without fear of any disagreeable consequences. Since this foot-note was written Dr. Allbutt has recommended in the *Practitioner* this treatment, which has been long employed by the author and many others.

lowing way. In all treatment, the object must be to obtain the greatest therapeutic effects with the smallest possible dose of medicine. This is particularly important with a powerful drug like digitalis; for if a large quantity be at once employed, it often appears to increase the embarrassment of the heart, and relief will only be obtained when the dose is diminished. And further, it is important not to give a larger quantity of the medicine than is necessary, as it is very possible the patient may require its use for a long period; for in such a case as above described, after a time the patient becomes accustomed to the medicine, and the dose which at first did good seems to have partially lost its effect when a larger quantity is required; but this could only be given with the greatest caution, and even with some danger, if the maximum quantity had in the first instance been employed. The importance of these remarks will be the greater if it should prove, as has been asserted, that digitalis is a cumulative poison. It is further important to keep the dose of digitalis as small as possible, or sometimes, after the medicine has been continued for some time, it produces general convulsions, which generally end in death.

The form of the preparation has, the writer believes, much to do with the success of the drug. The infusion, fresh and well made, will generally give far better results than the tincture. It is advisable to begin by using a drachm of the infusion twice, or not more than three times, a day. In many instances this will be enough. The effects on the pulse, the urine, and dropsy, are to be carefully watched. Under the influence of this medicine, when it is in sufficient quantities and does good, the pulse grows much stronger, more regular, and much slower, till, in very many cases, all irregularity ceases, and it becomes natural in frequency and rhythm. At the same time the urine, which previously may have been not more than half a pint in the twenty-four hours, is increased to one, two, four, or even eight pints a day. With this increase, and in proportion to it, the dropsy diminishes till it disappears. Should the influence of the drug be small or unnoticeable, the quantity in a few days may be increased; but it must be remembered, the good effects of digitalis may not become apparent till three or four days have elapsed. If an increase of the infusion be required, then a

drachm may be given every three or four hours, as the circumstances indicate, or one drachm may be given in the morning, and two in the middle of the day, and two at night. Should the symptoms resist this additional dose, another increase must be made in a few days. It not uncommonly happens that a small dose at first admirably succeeds, and removes much of the dropsy, but fails to accomplish all that is desired; when an increase in the quantity of the medicine must gradually be made.

The cases which we are now treating of require in most instances the free administration of alcoholic stimulants, and the best of these, on account of its diuretic action, is gin.

When a patient with the above-mentioned symptoms dies, there is found at the post-mortem examination great dilatation of the left ventricle, with very generally much true hypertrophy of its walls. Sometimes there is incompetence of the aortic or mitral valves, or of both; but by no means uncommonly both these sets of valves are healthy, and admit of no regurgitation when tested with water, although there has existed, during life, a murmur having the characters of a mitral one.

Digitalis will be found especially useful when there is much dilatation and hypertrophy of the left ventricle without any valvular disease, although a mitral murmur may have been heard during life; but unfortunately it is at present impossible in many cases to decide before death whether there is mitral disease or not.

It has been asserted, by eminent authorities, that if there be aortic disease digitalis is worse than useless, and will embarrass still further the heart, and increase the difficulty of breathing; but after a prolonged and careful investigation of this question the author is convinced that, in a case presenting the physical signs and symptoms above enumerated, the existence of aortic disease, whether obstructive or regurgitant in character, or both, does not in any degree contra-indicate the employment of digitalis.

Of the indications for digitalis above mentioned, the irregularity of the pulse is the most important, and is the one which most decidedly calls for this medicine.

Earlier stages of the above disease are not unfrequently met

with, when the symptoms, though troublesome, are not yet very severe. In these forms it is not uncommonly seen in children who some time previous have had rheumatic fever. In such patients the heart gives evidence of great dilatation and hypertrophy of the left ventricle, whose impulse is strong and heaving. There is generally a systolic apex murmur (mitral), with perhaps systolic apex thrill. At first these patients are only troubled with palpitation or exertion, but after a variable time, it may not be till many years have elapsed, there occur paroxysms of palpitation accompanied by urgent dyspnœa, and so often repeated, it may be, that the child cannot lie down at night, and is obliged to be propped up with pillows. In a further stage of the complaint the dyspnœa is continuous, but becomes paroxysmally worse, and the child is unable both night and day to assume a horizontal position. The pulse is generally in all these stages of the disease quite regular, but is generally very frequent and feeble, although the heart at the same time throbs violently against the chest. There is no dropsy, or this is slight and transient, appearing for a few days and then leaving, till for some reason the heart becomes more embarrassed again.

All these symptoms may be speedily removed, and the comfort and general well-being of the patient in consequence greatly increased, by digitalis. Under its influence the tumultuous strongly beating heart grows quiet and contracts less forcibly, while at the same time the pulse grows less frequent and much stronger.

The circumstance, which may be frequently witnessed, that in cases such as have just been described the pulse may be very weak and feeble, while the heart contracts with unnatural strength, is of importance and is worthy of attention, as is also the circumstance that while the digitalis strengthens the pulse it subdues the unnatural force of the heart's beat.

The first of these circumstances is of importance, as it is commonly concluded, in the cases now treated of, that the weak pulse indicates a correspondingly weak heart, and hence it has been concluded that, as digitalis is eminently suited for these cases, it is useful when the heart is feeble. Such a conclusion is certainly erroneous; for, as has been said, while the pulse is very weak the heart can be felt to strike the chest with a very consi-

derably increased force ; and further, when these patients die the left ventricle is found, very considerably dilated, it is true, but also very considerably hypertrophied.

This want of correspondence between the strength of the pulse and the heart's contractions becomes still more apparent when these patients are seized with an attack of palpitation. The heart then sometimes beats with sufficient strength to make its movements visible through the clothes, or even to shake the bed, and yet at the same time the pulse is felt to be very small and feeble. Where this discrepancy between the vigour of the heart's contractions and the strength of the pulse is permanent, it would appear as though the patients were troubled with a perpetual palpitation, which, however, becomes paroxysmally worse. This discrepancy between the pulse and the heart, which may be seen as a form of irregularity on the part of the heart, digitalis can correct ; and hence, while the heart under its influence becomes quieter and less forcible in its action, the pulse grows stronger as well as slower, and we have an instance in which digitalis controls a too strongly contracting heart.

In older people, an early stage of the severe disease which has been depicted may also be witnessed. In such there is much irregularity of the heart's action, and the pulse is also irregular and intermittent. On auscultation a mitral murmur may very generally be detected, and there is also perhaps an apex systolic thrill. These people may suffer from constant dyspnoea and from attacks of palpitation, during which the embarrassment of the breathing is much aggravated. There is no dropsy nor lividity of the skin, and the urine is secreted in natural quantity. In such a case infusion of digitalis in drachm doses, repeated, once, twice, or three times a day, will give most complete relief, quieting the palpitations, removing the dyspnoea, and regulating the pulse.

If in any of the milder (as also in the severer) forms of these complaints aortic valvular disease be present, such a circumstance is not to be considered an indication against the administration of digitalis.

It is an important question, for how long a time can the digitalis afford relief and preserve life ? As might be expected, the good results obtained will depend on the degree to which the

disease has advanced. In its earlier stages the relief may be so complete as to permit the discontinuance of the medicine, and the patient remain relieved for months or many years; but there generally occur occasional returns of the symptoms, which may be again and again removed by a fresh recourse to digitalis. Thus life may be greatly prolonged and made useful, although the sufferer is unfit for very arduous work. Even when dropsy has appeared, and has become extensive, great and permanent relief may sometimes be obtained; but in most cases where the disease has much advanced, and has lasted for some time, the relief—although it may be very great, and all the dropsy and dyspnoea may be removed—is of short duration, and the disease, as it were, catches up the medicine, and progresses in spite of it, till it ends in death. It must be received as a bad sign if a considerable dose of the medicine is required before relief is obtained, as also when it is necessary to give the medicine in increasing doses to maintain the good effects at first obtained.

Before the remarks on this form of heart disease are concluded, it may be mentioned that if no dropsy be present the digitalis will not considerably increase the quantity of urine, and will not therefore act as a diuretic; for usually where there is no dropsy the urine is excreted in natural quantities.

The following appears to be the history of the progress of the disease above described. At first, from valvular disease, or from some at present unexplained cause, the left ventricle dilates, and as it dilates also hypertrophies. When the dilatation and hypertrophy have progressed in some degree, the heart's impulse becomes strong and heaving, and is felt over an extensive area of the chest, while the patient is afflicted, at first on exertion only, with attacks of palpitation and dyspnoea. Next, as the disease advances, either gradually or suddenly, from some cause, the impulse becomes still stronger, more extensive, and more heaving, and the contractions are very frequent. At the same time the breathing is permanently difficult, but becomes with each attack of palpitation paroxysmally worse—so bad, indeed, as to give rise to the idea that the patient cannot live through it.

The pulse in this stage is frequent, small, and weak, and in

strength is altogether out of proportion to the strongly contracting, heaving, tumultuously acting, left ventricle.¹

As the disease still further increases, there is added to the above symptoms irregularity of the heart's action and irregularity of the pulse. With all the above symptoms and physical signs, there is at first neither fulness nor pulsation of the jugular veins, nor any lividity of the face, nor is there any dropsy; but with the further advance of the complaint these symptoms arise, and are probably produced in the following way.

In consequence of the irregular action of the walls of the heart and its columnæ carneæ, the mitral valves become incompetent, and permit of regurgitation. There may also be disease and incompetency of the mitral valves, with permanent regurgitation from the ventricle to the auricle, which regurgitation will be increased by the irregular action of the heart. By this regurgitation there is offered considerable obstruction to the passage of the blood through the lungs, and hence the right side of the heart is distended, and its valves in their lieu become incompetent, leading to regurgitation back into the veins, and to general dropsy, with lividity of the skin.

When the disease has reached its worst stage, the heart's action is so embarrassed that, although its walls are hypertrophied, it strikes with each beat feebly against the chest, and its impulse may be scarcely perceptible.² The pulse is also frequent, feeble, irregular, and intermittent.

In some cases, and especially with children, the disease may advance to a great degree without the occurrence of any irregularity of the heart's action, but with other patients such irregularity occurs early in the complaint.

At the post-mortem examination, and on such examinations these statements are founded, the left ventricle is found, as has already been stated, very considerably dilated, and also very greatly hypertrophied. Often the mitral, and not unfrequently the aortic valves are in a greater or less degree diseased, and admit of a variable amount of regurgitation.

¹ Digitalis controls this too strong action of the left ventricle, and then affords an instance of its usefulness in a hypertrophied and too powerfully acting heart.

² Digitalis in such a case quiets the heart, removes the embarrassment, and strengthens very considerably each beat. This is an instance in which the medicine strengthens the beats of an apparently weak heart.

With such a heart digitalis will be found of great service. The following explanation of its action is suggested.

By restoring order to the heart's movements, the regurgitation which was caused by the irregular action of the columnæ corneæ is removed, and regurgitation from the left ventricle to the auricle, and thence through the lungs to the right side of the heart, is prevented. If such be the explanation of its action, then it will only remove with completeness the symptoms when the mitral regurgitation is of the dynamic character, and will not be able to remove those which depend on organic disease of the mitral valves. Such, indeed, is the case; and where, as frequently happens, there exists, in addition to irregularity of the heart's action, organic disease of the mitral valves admitting of regurgitation, the digitalis, by removing the former, will remove the dropsy and other symptoms which it produced, but will leave the dropsy, and that share of the symptoms dependent on the organic disease of the valves, unaffected.

The truth of this statement may be verified, as such cases as the following kind unfortunately too often occur. A patient with dropsy, and with symptoms and physical signs like those above described, is partially benefited by digitalis, and much of the dropsy and dyspnœa is removed, but the medicine is unable to afford complete relief. After death there is found much disease of the mitral valve which permitted of regurgitation, and the left auricle is in consequence much distended. Such a condition of the mitral valves the digitalis of course could not remove, but that share of the dropsy and other symptoms which were produced by the irregular action of the heart, the digitalis was able to remove. The truth of these statements may be abundantly verified by post-mortem examination, combined by clinical observation, which investigations will show that digitalis is useful in proportion to the degree in which the dropsy, &c., is due to irregular action of the heart, and is independent of organic disease of the mitral valves.

Cases of the following kind not uncommonly occur, which may be greatly benefited by digitalis.

A patient (who has been perhaps troubled with slight palpitation of the heart for some years) on catching a cold is attacked with bronchitis, and has, in consequence, the palpitations much

increased. These palpitations in their turn excite severe paroxysms of dyspnœa. On examination the heart may appear healthy, or there may be only a slight mitral murmur. Such persons may have the palpitations removed from them, and the breathing made calm, by digitalis.

This medicine, however, leaves the bronchitis untouched, except that, by easing the breathing, it indirectly assists expectoration, and enables, by the same means, the patient to obtain refreshing sleep. In this indirect way digitalis may benefit the bronchitis, but the medicine here acts on the heart; and if with bronchitis there occurs much palpitation or irregularity of the pulse, this remedy is indicated.¹

Before treating the paroxysmal dyspnœa which may be present with bronchitis, it is important to learn if the paroxysms are accompanied by, and depend on, palpitation of the heart; for if so, ordinary antispasmodics, as lobelia, chloroform, or ether, will be without avail. Digitalis is the remedy generally required, and a drachm of the infusion taken twice or three times a day is generally sufficient.

Functional palpitations, and those attacks of palpitation which occur with hypertrophy of the heart,² may be relieved by small doses of digitalis. Here, probably, the palpitations are owing to some temporary aberration of function which the digitalis can set aside. It is certainly wrong to view the palpitations as the result of too much healthy action.

Those forms of heart disease which may produce dropsy, but over which digitalis has little or no control, will next be spoken of.

General dropsy dependent on heart disease is in some instances produced in the following way. The lungs degenerate and become emphysematous, and hence offer obstruction to the free circulation of the blood from the right to the left side of the heart. To meet and overcome this obstruction the right ventricle grows hypertrophied, but only sufficiently so to meet the obstruction offered to the circulation; and there is, unlike the healthy heart, but little reserve power left in this organ, and hence, on the occurrence of any sudden access to the obstruction of the circulation

¹ If during a fit of palpitation the heart beats very violently, one or two drops of tincture of aconite, given every quarter of an hour, may succeed in quieting it better than digitalis

² Aconite is very valuable in such cases.

through the lungs, the right ventricle becomes unequal to the task thrust upon it. Such a sudden access of obstruction is occasionally bronchitis; and on the occurrence, therefore, of an attack of this disease, the blood, unable to pass through the lungs with sufficient ease, accumulates in the right cavities of the heart, and overloads them to distension, till the tricuspid valves become incompetent, and permit of regurgitation from the ventricle to the auricle, and thence into the veins, where, if the obstruction in the lungs be great, dropsy will ensue. In such cases the dropsy varies with the amount of bronchitis; as this increases or declines, so does the dropsy grow greater or less. If the distension of the right cavities lasts a considerable time, then, on the disappearance of the bronchitis, the cavities do not regain their natural size, and the tricuspid incompetency becomes permanent, and the dropsy also.

In such a disease, digitalis appears to possess very slight if any power to strengthen the heart to overcome the obstruction in the lungs, and in consequence it is without any good influence unless the heart acts irregularly, which irregularity, when at all extreme, and even without either hypertrophy or dilatation of the left heart, or disease of its valves, adds to the difficulty of the breathing, diminishes the quantity of urine, and produces dropsy, or increases it if it is already present from the obstruction in the lungs. Such irregularity digitalis can remove, and with its removal will disappear that excess of the symptoms which it produced.

The inability of digitalis to strengthen the heart, and thus enable it to overcome any obstruction offered in the lungs, is well shown in cases of the following kind. A patient of middle or advanced age, whose heart is much dilated on the left side, and which acts irregularly, has in consequence suffered from dropsy, dyspnoea, &c., which effects have been thoroughly removed by digitalis. On catching cold, and on the occurrence of bronchitis, the dyspnoea, lividity, dropsy, &c., return, and it would naturally be thought that digitalis, which had previously done so much good by removing the same symptoms, would be again of service. But such is not necessarily the case, and a nice discrimination of the circumstances producing the return of dropsy, &c., must be made. Such a return, if there is much emphysema of the lungs, is not uncommonly solely due to the

obstruction caused in the lungs by the bronchitis and emphysema, and is in no way dependent on any effect the bronchitis has produced on the dilated left ventricle. In such a case digitalis can do no good, but remedies possessed of the power to control the bronchitis are needed. If, however, as not uncommon, the bronchitis affects the dilated left ventricle, and brings back the conditions which were present when the digitalis did so much good, then a return to this medicine will again afford relief. In deciding the question whether digitalis should be given or not, attention must be directed to the following points. If on the return of the dropsy, &c., there is also excited fits of palpitation, and with these also attacks of dyspnoea, and if also the heart be made to beat irregularly, digitalis is required; but if, on the other hand, although there is hurried breathing and a very quick pulse, the symptoms just mentioned are absent, the patient will obtain no good from digitalis.

There are other serious diseases of the heart by which dropsy may be produced, but over which digitalis has no control, and in which, unless care is taken, it may do much harm. The following is a concise description of such cases.

The patient, often in the prime of life, and it may be without any history of rheumatic fever, has for some time, perhaps for many years, suffered on exertion from palpitation. On auscultation there is heard an aortic, obstructive, or regurgitant murmur, or both combined. The heart is hypertrophied to overcome the obstruction to the circulation occasioned by the aortic valvular disease, and by this compensation the patient is saved from any troublesome symptoms except some palpitations. After a variable time serious symptoms may arise, which generally rapidly increase in severity, and in the course of a few weeks or months the patient dies. On this aggravation of the disease there occur paroxysms of palpitation, accompanied by urgent dyspnoea, which attacks may be occasioned by the slightest exertion, but also occur without any such provocation. Soon the dyspnoea becomes constant as well as paroxysmal, and about this time there appears dropsy in the legs, which rapidly extends till it invades the greater part of the body, and is often in excess in the pleural or peritoneal cavities. During the whole progress, and to the termination of the disease in death, *both the heart and pulse beat regularly and without any intermissions*, and the latter has often

the characters which are significant of aortic regurgitant disease. There is no lividity of the skin, but on the contrary this is strikingly pale and waxy looking; neither is there any fulness or regurgitation into the jugular veins. In addition to the aortic murmurs there may be one having the character of mitral regurgitation, but after death these valves are generally found healthy and competent.

The following appears to be the pathological history of such patients. On the occurrence from any cause of disease of the aortic valves the left ventricle grows hypertrophied, and is thus enabled to overcome the obstacle offered to the circulation by the valvular affection; and while the hypertrophy keeps pace with the disease, the patient is only troubled by the increased action of the hypertrophied heart, and in this condition the patient may live for many years but little incapacitated for work. After continuing in this state for a variable time, the disease of the heart may produce serious and fatal symptoms in the following ways, in both of which the effect on the circulation is the same. In the one case the disease in the aortic valves advances with great rapidity, so quickly indeed as to make it impossible for the left ventricle to hypertrophy sufficiently to meet the obstruction to the circulation offered by the aortic disease. In consequence much derangement of the circulation ensues, on which the serious symptoms above detailed depend.

In the other case the disease of the aortic valves may remain stationary, or progress very slowly, but the hypertrophied left ventricle undergoes (sometimes with great rapidity) degeneration, and becomes much softened, and in consequence of these changes in its structure it loses much of its power, and is unable to meet the increased demand made upon it in consequence of the disease of the aortic valves, and hence is produced a disturbance of the circulation similar to that of the former case, and there then arises the dyspnoea, palpitations, &c., which have been described.

In such cases digitalis will do little or no good; it sometimes appears to control in a slight degree the palpitations and the attacks of dyspnoea, but it not unfrequently happens that under its influence the pulse grows feeble and intermittent, an effect the author has witnessed when the substance of the left ventricle was much degenerated and softened.

ON THE RELATIVE EFFECTS OF MORPHIA AND ATROPIA ON THE TEMPERATURE OF THE BODY.

BY ROBERT P. OGLESEY,

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FROM the hypodermic administration of morphia and atropia in practice, and the beneficial results thus obtained, I have been led to make investigations as to their relative effects on the temperature of the body, believing that their value as therapeutic agents, when administered hypodermically, has hitherto been much undervalued. It has occurred to me to administer by injection beneath the skin, both these drugs in those cases of collapse which not unfrequently occur during severe attacks of summer cholera, and in those cases of cholera which present marked features, leading one very cautiously to draw the line (if it be possible) between our severe summer cholera, and the one of a more deadly nature. That these drugs exercise a beneficial effect when administered hypodermically during the stage of collapse, I think none will deny who have given them a fair and impartial trial. I venture to put forward the opinion, that they act beneficially by rapidly increasing the temperature of the body, when administered in small doses; and I would advise that the use of very small doses, repeated two or even three times at short intervals, is preferable to the use of an ordinary minimum dose; for after the administration of an ordinary dose, in a case where the powers of life are very low, the drug (either morphia or atropia) first exercises a marked effect by speedily lowering the temperature of the body, an effect which will often last for several hours, to be followed by a rise which is often so quick and so considerable as to place the patient in imminent danger.

Although the effects of even a very small dose of either drug

is to quickly lower the temperature of the body, yet such effect is of short duration, and is speedily followed by a very steady rise, lasting over a series of hours.

To arrive at some definite conclusion on the subject, I determined to investigate it closely by experimenting upon animals. This I have done largely, and I must own that to my own mind the proofs are very conclusive.

I was surprised to find how in practice the action of the two drugs coincided, when administered hypodermically, in the same class of cases; but more so, to discover their similarity of action when administered in health. When referring to the action of these drugs, I advert only to their action on the temperature of the body. I purposely in this paper avoid discussing the various effects the drugs produce on the nervous system, the blood-vessels, &c., because I did not apply myself to the elucidation of such phenomena. For information regarding the action of belladonna, I would refer my readers to the writings of Dr. John Harley, and to an admirable paper on the subject by Dr. Fraser, in the *Journal of Anatomy and Physiology* for May 1869.

I may relate, as an appendix to one or more cases, the chief symptoms which I observed after administering poisonous doses of belladonna, and also the appearances found on post-mortem examinations.

The temperature in each experiment was taken in the rectum, and the minimum time the thermometer remained was six minutes; the maximum, fifteen. To avoid fallacy, the temperature in each case was carefully noted several times before the drug was administered. Practically, I found that the thermometer rarely, if ever, rose after the lapse of three minutes, providing the bulb to have been some considerable distance within the sphincter ani. The exact distance the thermometer is placed within the rectum I believe to be of great practical importance in making observations of a very reliable nature. The practice of only inserting the bulb within the sphincter, and not fairly in the bowel, leads to great discrepancy in the registration of temperature by different observers in the same case.

It may not be out of place to notice the effect small doses of morphia have in increasing the appetite of animals. If the dose has been small, and the animal not visibly affected by it, the desire for food is often intense, and large quantities are

consumed greedily. This is especially noticeable in the case of rabbits and guinea-pigs.

Experiment 1.—A healthy young cat, deprived of food for several hours, had a temperature of 101° .

At 9.30 A.M. a solution of the bimeconate of morphia, containing one-eighth of a grain, was injected beneath the skin:—

A.M.	Temp.
10	$99^{\circ} 1'$
11	$99^{\circ} 0'$
12	$99^{\circ} 4'$
1 P.M.	$100^{\circ} 3'$
2 „	$102^{\circ} 1'$
4 „	$102^{\circ} 3'$

In the foregoing case the effect of the dose was very marked, the cat being much affected by it, jumping and running round the room, and uttering plaintive cries. The increase of temperature lasted many hours.

Experiment 2.—A guinea-pig, four hours after a meal, had a temperature of $101^{\circ} 2'$.

At 4 P.M. it was injected beneath the skin with a solution of acetate of morphia containing one-eighth of a grain:—

P.M.	Temp.
4.30	$101^{\circ} 2'$
5	$102^{\circ} 2'$
5.30	$102^{\circ} 4'$
6	$103^{\circ} 0'$
8	$104^{\circ} 1'$

In this case, $101^{\circ} 1'$ was the maximum degree attained. This degree was maintained with but little alteration until 10 P.M., when there was a very sudden and progressive fall to rather below the normal standard, probably owing to the long fast the animal had undergone.

Experiment 3.—A strong terrier, three hours after a meal, had a temperature of $102^{\circ} 3'$. At 4.30 P.M. was injected hypodermically with a solution containing one-eighth of a grain of morphia:—

P.M.	Temp.
5	$101^{\circ} 4'$
5.30	$101^{\circ} 1'$
6	$101^{\circ} 1'$
6.30	$101^{\circ} 4'$
7	$102^{\circ} 1'$
8	$102^{\circ} 4'$
9	$103^{\circ} 1'$

The maximum temperature in this case was steadily maintained for several hours, although the dog from time to time vomited freely.

Experiment 4.—A guinea-pig, after fasting ten hours, had a temperature of $102^{\circ} 1'$.

Injected at 6 P.M. with one-sixth of a grain of morphia beneath the skin:—

P.M.	Temp.
6.30	$102^{\circ} 1'$
7	$102^{\circ} 1'$
7.30	$103^{\circ} 2'$
9	$104^{\circ} 1'$
11	$103^{\circ} 6'$
12 A.M.	$102^{\circ} 3'$

Experiment 5.—A rabbit, one hour after a hearty meal, had a temperature of 103° . A solution containing one-eighth of a grain of acetate of morphia was shortly afterwards (12.30 P.M.) injected hypodermically:—

P.M.	Temp.
1	$103^{\circ} 1'$
2.30	$102^{\circ} 3'$
3.30	$102^{\circ} 4'$
5	$103^{\circ} 3'$
6	$103^{\circ} 4'$
7	$104^{\circ} 0'$
8	$103^{\circ} 2'$

Experiment 6.—A strong cat, after fasting for several hours, had a temperature of 102° .

At 3.30 P.M. it was injected beneath the skin with a solution containing quarter of a grain of acetate of morphia.

P.M.	Temp.
4.10	$101^{\circ} 3'$
4.35	$104^{\circ} 0'$
6.50	$104^{\circ} 1'$
8	$104^{\circ} 2'$
10	$104^{\circ} 2'$
11	$103^{\circ} 1'$
11.30	$103^{\circ} 1'$
12	$102^{\circ} 3'$

The large dose of quarter of a grain had a very marked effect on the condition of the cat. It had many violent convulsions, and an inability to use the hind legs properly. This condition did not pass off till the following day.

In the following experiments it will, I think, prove that the action of atropia on the temperature of the body is similar to that of morphia.

Experiment 1.—A large rabbit, twelve hours after a meal, had a temperature of 103° . At 6 A.M. was injected hypodermically with a solution containing one-sixth of a grain of sulphate of atropia :—

A. M.	Temp.
7.25	$102^{\circ} 1'$
8.40	$102^{\circ} 0$
9.50	$103^{\circ} 1$
11.40	$103^{\circ} 3$
12.40 P.M.	$104^{\circ} 0$
2 "	$104^{\circ} 1$
5.1 "	$103^{\circ} 3$
8 "	$103^{\circ} 0$

Experiment 2.—Twelve hours after a meal, a healthy and well-grown rabbit had a temperature of $103^{\circ} 3'$. At 7 A.M. was injected beneath the skin with a solution of sulphate of atropia containing one-sixtieth of a grain :—

A.M.	Temp.
7.35	$103^{\circ} 1'$
8.50	$104^{\circ} 2$
10 	$104^{\circ} 3$
11 	$104^{\circ} 0$
3 P.M.	$102^{\circ} 2$
6 	$101^{\circ} 1$
10 	$99^{\circ} 4$

At this time the rabbit was seized with violent convulsions, which lasted until the time of its death, thirty hours after the administration of the poison. For several hours previous to death the temperature fell very steadily, and a few minutes before death the thermometer registered $94^{\circ} 2'$.

A post-mortem examination, made shortly after death, showed considerable discoloration of the muscles of the back in the lower dorsal and lumbar region from extravasation of blood. On examining the cord and its membranes, an effusion of blood between the membranes and cord was found at a point corresponding to the one in the muscles of the back. Around the medulla there was a thin layer of blood. The organs of the body were quite healthy, with the exception of the right lung, which was slightly congested.

Experiment 3.—A guinea-pig, after fasting twelve hours, had a temperature of $102^{\circ} 1'$. At 7.20 A.M. a solution containing one-fortieth of a grain of sulphate of atropia was injected beneath the skin :—

A.M.	Temp.
8	$101^{\circ} 4'$
8.30	$101^{\circ} 0'$
9	$102^{\circ} 3'$
9.30	$102^{\circ} 4'$
10	$103^{\circ} 0'$
11	$103^{\circ} 2'$
12	$103^{\circ} 4'$
1 P.M.	$103^{\circ} 1'$
2 „	$102^{\circ} 4'$
3 „	$102^{\circ} 4'$

Experiment 4.—A strong rabbit, ten hours after a meal, had a temperature of 103° . Injected beneath the skin at 6 A.M. with a solution containing one-fiftieth of a grain of sulphate of atropia :—

A.M.	Temp.
6.20	$102^{\circ} 3'$
6.50	$102^{\circ} 1'$
7.30	$102^{\circ} 2'$
8.30	$103^{\circ} 1'$
9.30	$103^{\circ} 2'$
2.30 P.M.	$101^{\circ} 4'$

Animal fed at 2.40 :—

P.M.	Temp.
4	$102^{\circ} 0'$
5	$102^{\circ} 3'$
6.30	$103^{\circ} 3'$

Experiment 5.—A rabbit, four hours after a meal, had a temperature of 103° . At 2.30 P.M. injected beneath the skin with a solution containing one-fortieth of a grain of sulphate of atropia :—

P.M.	Temp.
3	$102^{\circ} 3'$
3.20	$102^{\circ} 3'$
4	$102^{\circ} 3'$
5	$103^{\circ} 0'$
6	$103^{\circ} 1'$
7	$103^{\circ} 1'$
8	$103^{\circ} 2'$
9	$103^{\circ} 1'$
10	$103^{\circ} 0'$

Experiment 6. — A cat immediately after a meal had a temperature of 103° . Injected at 6 P.M. with a solution containing one-sixtieth of a grain of atropia:—

A.M.	Temp.
6.15	$102^{\circ} 4'$
6.30	102 3
7	102 3
7.30	102 2
8	102 4
8.30	103 1
9.30	103 2
10.30	103 2
11.30	104 0
12.30 P.M.	104 0
1.30 „	104 0
3 „	103 4
7 „	103 1

In many instances the same animals were experimented on again and again, always allowing a lengthened period to elapse between each experiment—generally a fortnight.

The results were very conclusive. In but two instances was there any marked difference in the effect of the drugs at a second or third experiment on the same animal, and such I believe to have been due to causes sufficiently palpable to render such experiments valueless. I refer to the general health of the animal. In both cases the animals were evidently out of health, although they had shaken off the effects of the drugs administered previously, and appeared to enjoy good health till a few days before the second experiment. In these cases the temperature fell very rapidly, and remained at a low point for many hours, a corresponding rise afterwards resulting.

To Mr. Enoch Snell, of Leeds, my best thanks are due for his kindness in assisting me during some of my earlier investigations on this subject.

ON THE TREATMENT OF CARBUNCLE.

BY JAMES GREY GLOVER, M.D.

THE treatment of carbuncle, like many other points in therapeutics, has got into ruts, and even if a larger experience shall not fully justify the treatment I mean in a few words to recommend, good will be done by getting out of the ruts. There have been two points in the treatment of carbuncle on which authorities and practitioners have been very much agreed; the first a surgical point, and the second a medical one—a crucial incision and plenty of stimulants. This creed has been so extensively received and acted upon, that I question it with all proper hesitation and diffidence. But nevertheless I do question it seriously, and recommend another line of practice less extreme, not painful, and I venture to say very effective in the majority of cases of carbuncle occurring in tolerably healthy persons, free from serious organic disease.

It is well in all cases of carbuncular disease to look to the state of the great organs and the kidneys. Supposing there to be any serious disease, as albuminuria or diabetes, these would have to be regarded, but they would not materially affect the principles of the treatment which I am about to describe, and which answers very well in my experience.

The negative features of this treatment are the absence of incisions, the absence of poultices, and the absence of huge quantities of wine or other stimulant with which it has been too much the fashion to heal and sometimes poison the patient.

As regards abstention from the crucial incision, this point has been lately so authoritatively put before the profession in the

Lancet, by Mr. Paget, that I feel more free to recommend this negative practice, which I had come to believe in before Mr. Paget declared it to be his. I never could see the good of incisions where the cellular tissue was implicated and in a sloughing state. Incision seldom liberates the sloughs, for the liberation of these is a vital process, and their separation is generally not effected until several days after the incisions. These incisions do not tend to save skin, because already the vitality of the skin is generally compromised, as shown in its being livid in colour, and perforated at various points. The most that incisions do in this state is to liberate blood, and this does not tend to support the waning vitality of the tissues. Perhaps the greatest argument for incision is that it tends to relieve the pain and tension of the part. But I think the pain can be relieved in a less objectionable way. Sometimes in bad cases of carbuncle there are boggy spots containing pus, almost as if they were pyæmic deposits, which it is well to liberate by an incision, but it need not be a long or crucial one.

Further, I do not like a prolonged application of poultices. Beyond the first day or two I think they are objectionable, and tend to weaken and relax the part, and favour the spread of the carbuncular action.

The administration of large quantities of stimulant and all sorts of nourishment in cases of carbuncle is now only part of a general fashion of excessive feeding that is already going out. I am satisfied that of all the forms of blood-poisoning which have been so prevalent of late, that by alcohol is not the least common. I heard of a little infant, the child of a patient of mine, afflicted with diarrhœa, which, at the sea-side, in two or three days got half a bottle of brandy. Of course it died, very likely of pure narcosis. I am very glad that Mr. Paget has raised his powerful voice against the routine practice of excessive stimulation in the clinical lecture referred to; and now, in a few words, I shall describe the treatment which I pursue in carbuncle, and which answers well.

Instead of the ordinary dressing of linseed poultices, I apply turpentine ointment on a piece of lint the size of the carbuncle, or slightly larger, and over this a large piece of cotton-wool. The ordinary turpentine ointment of the Pharmacopœia is rather

strong, and bears generally to be mixed with equal parts of lard, or spermaceti ointment. This dressing is light and clean, and slightly stimulating. It seems to favour the vital process of separation of the sloughs, and the return of a better hue to the affected skin. It should be changed twice or thrice a day, according to the stage and degree of the disease and the amount of discharge.

As to the general medical treatment of the patient, there are two points which I think important: first, the administration, three times a day, of quinine, two grains or so, in conjunction with tincture of the perchloride of iron, in ten or fifteen minim doses, well diluted; and, secondly, the administration nightly of a grain of opium to relieve pain and procure sleep. More might be necessary, but I have always found this to be sufficient.

The diet of the patient should be good and nourishing; but it should be simple, and not incommoding. I mean the patient should neither be stuffed with food, nor heated with stimulants. But beef-tea or milk may be administered *ad libitum*, and I think a glass or two of wine in the day helps the patient. If the tongue is little furred, and there is not much anorexia, then the less departure from ordinary sensible feeding the better.

Turpentine ointment and cotton-wool locally, an opiate at night, and quinine and iron three or four times a day, and a good, simple, nourishing diet, are the essential points of the treatment I recommend, and which I think the profession will find satisfactory in the majority of cases. Within the last few days I have had a case of carbuncle in a patient about fifty, which almost provoked incision by its tension and tendency to spread, but I abstained, and practised the above treatment, and it has done excellently.

Reviews.

1. *Die chronische Lungenschwindsucht und Tuberculose der Lunge, ihre Ursache und ihre Heilung.* Von Dr. HERMANN BREHMER. Zweite umgearbeitete Auflage. Berlin, 1869.
(*Chronic Pulmonary Consumption and Tuberculosis of the Lungs, their Cause and their Cure.* By Dr. H. BREHMER. Second Edition. Berlin, 1869. London: Williams and Norgate.)
2. *On the Influence of the Alpine Climates on Pulmonary Consumption.* By HERMANN WEBER, M.D. *British Medical Journal*, Vol. II. 1868.
3. *Die hochgelegenen Plateaus als Sanatorien für Schwindsüchtige.* Von Dr. FRIEDRICH KÜCHENMEISTER, in Dresden. Separatdruck aus d. öesterreich. *Zeitsch. f. prakt. Heilk.* Wien, 1868.
(*The Elevated Plateaux as Health-resorts for Consumptive Patients.* By Dr. F. KÜCHENMEISTER.)
4. *Die Landschaft Davos (Kanton Graubünden) als Kurort gegen Lungenschwindsucht.* Von Dr. A. SPENGLER, Arzt auf Davos-Platz. Basel, 1869.
(*The District of Davos (Grisons) as a Health-resort in Pulmonary Consumption.* By A. SPENGLER. Basle, 1869. London: Williams and Norgate.)
5. *On the Treatment of Consumption by prolonged Residence in Elevated Regions.* By HERMANN WEBER, M.D. *Medico-Chirurgical Transactions*, Vol. LII. p. 225. 1869.

IN studying the above-named works we can observe the progress of one of the most momentous inquiries which has ever engaged the attention of practical physicians. There is no need to say a word in order to persuade English medical men either of the pressing importance of the subject of climatic treatment in phthisis, or of the unsatisfactory state in which our knowledge of this matter still remains. Light seems, however, to be breaking from all sides at once upon the mystery of this disease. The readers of this journal are doubtless acquainted, from other sources, with the remarkable discoveries recently made with

regard to the pathology of so-called "phthisis;" and we have ourselves briefly analysed a paper of Dr. H. Weber on the new climatic treatment of the disease. We propose, now, to show how extensive and weighty is the existing literature of the high-level consumption treatment; and we would even hope that our impartial criticisms may assist in indicating the essentials of a climatic treatment of phthisis which will avoid some extremes, both on the one hand and on the other. But it may be said, at once, that the mass of evidence produced in the works now to be reviewed is far too great for us to question any longer that we have here the materials for a most important revolution in our ideas as to the appropriate treatment of at least a large class of consumptive patients; and we regret that among some of the older English practitioners there has been manifested a rather unreasonable reluctance to give the new facts a fair hearing.

When one remembers the stereotyped ideas as to the kind of climate suitable to the treatment of consumption with which the whole profession was impregnated until quite within the last few years, one is tempted to exclaim, that there is no real basis of science for our hygienic doctrines at all, or such violent swings of the pendulum would not be possible. *Celum non animum mutant* is a saying difficult to apply to climatologists whose faith has deserted the moist, muggy, winterless lowlands that used to be in fashion, and fled to their precise opposite—the cold, dry, and keen atmosphere of the Andine valleys, or the Engadine. We suspect that the public find this transition passing strange, and that the more cynical of them mock at the doctors and their mad ways. Yet the violence of the change is more apparent than real, and it will be well to take care that enthusiasm for the new ideas does not blind us to the fact. One of the first tasks which a reviewer of this subject ought to set himself is the repairing a great injustice which has been done to our countryman, the late Dr. Archibald Smith. Dr. H. Weber has already pointed out the priority of this gentleman's observations on high-level health-resorts in consumption; but we have a special motive for recurring to the subject. Dr. Brehmer, whose treatise, interesting in many respects, is disfigured by a certain lack of courtesy and respect for distinguished fellow-labourers, speaks of himself as the inventor of the new doctrine and practice. It is probable that Dr. Brehmer never heard of Archibald Smith, but it is the more necessary to insist that the observations made by the latter, so long ago as 1840, on the hygienic effects of residence in the Andine valleys, 8,000 to 10,000 feet above the seaboard, were the starting-point of the doctrines which Brehmer claims as his own. And the importance of Smith's researches rests on this, that they are an eye-witness's faithful record of the results of an ancient treat-

ment long established in Peru, and based on empiric observations on so enormous a scale as to leave no room for doubt in the mind of any intelligent resident in the country. The Peruvians possess unrivalled opportunities for testing the value of high-level residences in phthisis; for on the one hand the disease is very common in their lowlands, and, on the other, the slopes of the Andes afford a variety of sheltered valleys at great elevations, in which the invalid can obtain all the effects of their dry mountain air, without too much wind. The results, it would appear, are most striking, not merely as regards the improvement of general health, but specially as to the liability to *hæmorrhage*.¹ The latter observation, in particular, is a severe rebuke to the theorizing way in which the climatology of phthisis has been mainly dealt with in Europe, since it is exactly opposed to the generally received ideas; and it is of such importance, that we hasten to add that the testimony of all the recent observers of the effects of high-level health-resorts unanimously confirms it.

In a later paper,² Smith states that in the whole of Peru, with its vast range of climate, phthisis is nowhere more prevalent than "in the mild and equable temperature of the capital and its immediate environs," while it is little known in the mountain regions except as imported from the coast. "In the warmer valleys of the centre of the Andes the health of the consumptive invalid is not restored. In hæmoptysis, which is the usual forerunner of consumption in Lima, the invalids themselves rarely trust to medicine, but at once order the mules . . . and they seek at the first notice of the disease to insure a full reparation of the injured respiratory organs, by an adequate continuance in the well-known and appropriated regions of convalescence." When the disease has further advanced and has produced perceptible deviation from the normal murmur, with almost always obscurity of sound on percussion under either the right or left clavicle, "no Lima junta of experienced native or well-acclimatised English physicians would for a moment hesitate to order the patient to the Sierra. They would deem this transfer of climate as the only security for the patient." In the same paper, Smith states that he has seen much good result, even in the advanced stages of phthisis, from removal to elevated regions; but he does not expect a perfect cure in such cases. "It must be clearly understood, therefore," he says, "that I claim the curative effects of the Andine climate, on the broadest ground of facts and experience, in favour of the early stages only, and not the more advanced periods of consumption, where there is, correctly speaking, no sound lung to rescue."

Among the places approved in Peru for the treatment of

¹ *Edinburgh Medical and Surgical Journal*, vol. liv. 1840.

² *British and Foreign Medical Review*, vol. xviii. 1856, p. 479

phthisis, Archibald Smith mentions Harawag and Canta on the route from Lima to Pasco; "but Canta above all, on this route, is allowed to be the most desirable, being about 25 leagues from Lima, and at an elevation of 10,000 feet." He further names "on the Zarma road from Lima," and also on the Pacific slope of the Cordilleras, Mantanea and San Mateo; the former (according to McLean) 8,026, the latter 10,984 feet high. On the opposite slope of the Cordilleras, Zarma and Janja are the places recommended by the Lima physicians, and the latter (above 10,000 feet) is allowed to have the preference.

The position of the question, as brought out by A. Smith, is still more strikingly shown in another paper. "In further evidence of the importance attached to the climate of Janja by the physicians, Government, and inhabitants of Lima, and the coasts of Peru in general, I shall here briefly refer to the 'Estadística General,' or general statistics of the capital, as published by Dr. A. Fuentes, of Lima, in 1858. He says on this subject, 'Janja has always been the refuge of the consumptive people, and a lengthened experience has demonstrated the favourable results of its climate. Nevertheless,' he observes, 'many are disappointed of the benefits they expected from Janja, because they do not leave Lima for that district until in the last stage of pulmonary decay; or because they do not remain in Janja the time required by nature to ensure a perfect recovery: or because, after visiting this sanitarium, instead of following a methodic life, suited to their state of disease, they abuse the advantages of the climate by the very help of the relief they derive from it, and commit excesses which can only lead to their premature death.' But the important result, notwithstanding such instances of irregularity, is, as told by Dr. Fuentes, that the proportion between the *cured* and the total number of patients, in all stages of pulmonary consumption, sent to Janja, amounts to $79\frac{4}{5}$ per cent. And in view of so important a general result to the patients from the capital, where the Indian soldier is singularly prone to phthisis—a disease almost unknown in his native hills—the Government have of late years, in 1860, initiated a military hospital for consumptive patients from the coast, and capital in particular, in the vale of Janja." ("Climate of the Swiss Alps and Peruvian Andes compared:" *Dublin Quarterly Journal*, May 1866.)

What has been shown us for Peru by the researches of Smith has been proved also for Mexico by Jourdanet, who informed the world that a prolonged residence on the plateau of Mexico exercises not only a prophylactic but also a curative influence on phthisis. ("La Mexique et l'Amérique tropicale," &c. Paris, 1864, pp. 204 *et seq.*) And Guilbert has done the same for Bolivia, as well as for Peru ("De la Phthisie pulmonaire dans

ses Rapports avec l'Altitude et avec les Races en Pérou et en Bolivie." Paris, 1862), and by Scrivener for the mountains of Cordova ("Sanitary Character of the Andine Heights," being a reprint, in private circulation, from an article by Dr. Scrivener in the *Revista de Buenos Ayres*).

Such and so strong being the evidence as far as regards the influence of elevated health-resorts in Central and South America, it is immensely interesting to observe the positive evidence of a confirmatory nature which has been brought forward of late years from the experience of mountain climates in Europe. Lombard, H. Weber, and Spengler all assure us that the natives of the Engadine and the Davos, when attacked by consumption during a residence abroad, are cured by a timely return to their mountain homes. And it would be easy to adduce a great deal more testimony to the same effect if we desired now to finally adjudicate upon the question—which is the best kind of climate for phthisical patients? At present, however, we only wish to point attention to the extraordinary apathy of the greater part of the medical profession to one of the strongest *primâ facie* cases, at least, that was ever adduced for a new method of treatment. We shall have more to say on this point hereafter; at present we shall only dwell on the following, which are the most obvious of the reasons why the high-level climates are not even experimented upon by the great mass of practitioners.

1. *A mild and equable climate* is widely regarded, from tradition, and from some of the superficial features of the disease, as the best for consumption. This idea has firmly laid hold of our minds; and yet, where are the warm and equable climates to which consumption is a stranger? The fact is, rather, that warm and equable climates, especially if they are at the same time moist, are the greatest hotbeds of consumption; not only is it a frequent disease in such places, but it is much more rapidly fatal than in colder climates with great changes of temperature.

2. *Cold*, i.e. low temperature, is by many persons considered as predisposing to consumption: but there are no facts to support the view that *cold in itself*, without moisture and wind, is a cause of consumptive diseases: we possess, on the contrary, much evidence that a cold and pure air counteracts the tendency to phthisis.

3. *Great variations of temperature*, as they generally exist in mountain regions, have the reputation of being specially deleterious to consumptive persons. But the fact is, explain it as we may, that most of the climates in which phthisis does not exist are characterised by great ranges of temperature: this is true not only of the mountain climates proper, but of the steppes of Orenburg; and Archibald Smith adduces over-

whelming evidence of the same fact from his experience of various localities in Peru.

4. The *diminished atmospheric pressure* in high elevations has always been popularly believed to predispose to hæmoptysis, and even Lombard supports this view ("Les Climats de Montagnes," 2d edit. 1858). Nor is it at all surprising that such an opinion should have become current, considering the remarkable sensations which are experienced by the inhabitants of low countries on first ascending into mountain air. But if we investigate the reliable medical evidence, we find it altogether the other way, as we have already remarked.

5. It is the general opinion that *open-air exercise* is essential for the cure of phthisis, and that the rigour of the colder months in mountain districts prevents it from being safely taken, and thus leads to confinement in close rooms, under penalty of catarrhal and inflammatory attacks if the precaution be neglected. Among the authors whose works are placed at the head of this article, Brehmer seems as yet not to have kept his patients in his elevated health-resort during the winter, though he contemplates doing so in future; but H. Weber has already sent a considerable number to the Alps during winter, and Spengler has for several years been in constant attendance on consumptive patients at Davos: from both these authors we learn that these patients have been in the open air almost every day; that they have taken drives in sledges on the coldest winter days—the heat in the sun being very considerable; that they have also been able on many days to sit for hours in balconies on the sunny side of the house; and that they *have rarely felt cold, either indoors or out*. Most of H. Weber's patients have even slept with a window partly open during the coldest nights, and he mentions that those of his patients who had spent some winters in warmer places (Egypt, Algiers, the Riviera) and some in colder elevated regions, had been invariably more free from catarrhal and other fresh affections in the cold than in the warmer climates. On the question of exercise strictly so called, *i.e.* muscular exertion, we shall have some remarks to make at a later stage.

6. A far better grounded objection to the high-level health-resorts for consumption than any yet mentioned is the *want of accommodation* and of proper food at these places, especially during winter. The winter accommodation in the Engadine and at Davos is already much improved, however; and the food, though it might be better, is tolerable; moreover, if the demand were increased, good winter establishments would soon be set up in several parts of the Swiss, Italian, and French Alps, as also in Germany: and the social wants of the invalid would also thus be satisfied; though we would protest against the craving

for the dissipation of parties, &c., and for attending divine service in cold and draughty churches. For the inhabitants of America an abundance of high-level health-resorts can be found among the Andine heights of Peru, Bolivia, New Granada, and the Argentine Confederation, and on the plateau of Mexico. For Indians there must be numbers of suitable localities in the Himalaya range. And besides these localities we may mention the city of Erzeroum, in Asia Minor, and the table-lands of South Africa and of Abyssinia.

Thus far, then, it would appear that the objections urged against the adoption of high-level health-resorts for consumption are more theoretical than practical; and that they offer no serious obstacle which might not, probably, be entirely overcome. It is now our duty to inquire a little into the *modus operandi* of the curative influence; and this, to say the truth, is not very easily explained.

Brehmer, it is true, has a complete theory, which may be thus summed up: In persons predisposed to consumption there is a *habitus phthisicus*; this is characterised by a long chest and long lung, with a small flaccid heart. This small heart is unable to supply the abnormally large lungs with sufficient blood; the lungs are thus ill-nourished, half-starved; low kinds of inflammation (catarrhal pneumonia) are apt to occur in them; the products of these inflammations are frequently not absorbed, but undergo cheesy transformation and lead to the usual changes of phthisis. The physiological effect of elevated regions is an increased frequency and strength of the heart's contractions, increased tissue changes, an improved nutrition of the muscular systems of the heart and of the lungs; and thus we possess in them an antidote against consumption.

Now, on examining this theory, we remark: 1. The pre-existence of the phthisical conformation requires stricter proofs. The natives of the Peruvian Andes, who, according to Smith, became consumptive while serving in the army at Lima and other towns of the coast, have probably been originally well-formed; the inhabitants of Davos, who had become consumptive while residing in different towns in Europe, had, as Spengler assures us, well-built chests before they left their elevated valley; the two first cases reported by H. Weber were in perfect health when they left their mountain homes, but the condition of their lungs and hearts, and their entire nutrition, had probably changed after a prolonged stay under unfavourable influences in London. Is not, one may ask, in these and many other cases, the *habitus phthisicus* the effect of a general change in the nutrition, and of the altered respiratory action? and does not this change also give rise to catarrhal inflammations and their products?

2. It is true that an increased frequency of the heart's con-

tractions is one of the physiological effects of elevated regions, at all events in most cases and at first; but Brehmer has not proved that it continues after the constitution has become somewhat accustomed to the new climate, and our inquiries lead us to doubt this. From good evidence we are inclined to infer that the inhabitants of mountain valleys do not have a more frequent pulse than those of lower regions. Brehmer ascribes the increased frequency to diminished pressure of the air, and says that his own pulse, even in the same locality, always quickens with a lowered barometrical pressure. Can we form an inference from one case? If the diminished pressure of the air had much to do with the cure of consumption in elevated regions, then one would think that a certain rate of elevation, corresponding to a certain diminution of atmospheric pressure, would be sufficient in all localities; but this is by no means the case. Brehmer himself agrees on this point with Lombard, H. Weber, Küchenmeister, and others, that the elevation necessary, in different regions, to produce a certain immunity, varies greatly; that in the neighbourhood of the equator it requires over 10,000 feet, while in the middle of Germany 1,500 feet seem to be enough. If we look at the map we find, in those regions where the elevation necessary is very great, high mountains with vegetation, and sometimes cultivation ascending to a great altitude: while in those regions where 1,500 feet is sufficient for immunity there are no mountains exceeding 4,000 feet in height, and the fertility of the soil and the habitations of man cease at a much lower level than that. Without committing ourselves to a theory, it is not unreasonable to fancy that the air at such relative elevations is freer from foreign admixtures of organic and inorganic nature; and in some health-resorts this advantage would be more prominent during the cold months, when the ground is entirely covered with snow, a circumstance which would partly explain why most of the patients in the Engadine feel themselves better in winter than in summer. Possibly the remarkable fact discovered by Bowditch and by Buchanan bears a similar explanation, and favours the view just expressed. As the air in relatively high localities is less charged with products of decomposition, so probably the drying of the soil diminishes the amount of decomposition going on in the surface soil, and diminishes in this way the amount of the products of decomposition contained in the air of houses and places situated on such soil; and it is not unlikely that an air comparatively free from foreign—especially organic—impurity does not favour the occurrence of those catarrhal and inflammatory processes which so often lead to phthisis. Upon the theory thus suggested, we might understand why some not very elevated health-resorts possess immunity from phthisis.

Another physiological effect attributed by Brehmer and Spengler to the air of elevated regions is *increase of tissue change*. Without denying this we must agree with H. Weber that no satisfactory evidence has, so far, been given to the fact. Nobody, to our knowledge, has shown that more carbonic acid is exhaled, or more nitrogenous matters excreted; no one has even proved that the respirations are deeper or more frequent, or that more air is inhaled. It is most desirable that accurate investigations should be made on these points; as yet there are none in existence. If no larger quantity of air were inhaled in high regions, then, of course, the quantity of oxygen inhaled would be less than in low countries with a denser atmosphere; and the question would arise, whether high elevations may not act by diminishing the work of the diseased lungs. We may mention here, that some patients who have resided in high situations, for their health, have assured their medical attendants that after the first week the appetite for food diminished, and remained lower, although they had no distaste for their meals; and that in spite of diminished ingestion they gained weight.

And now, having stated as succinctly as we could the state of our information about the new climatic treatment, we shall conclude this article with a brief retrospect of the progress made, on the whole, towards a clear idea of the best way of treating consumption. We promised, in commencing this article, to do our best to avoid any undue bias towards an exclusive method of treatment; and in fact any such exclusiveness would be, in our opinion, most unfortunate.

1. It seems difficult to doubt any longer that the circumstances, whatever they are, which prevail in certain mountain valleys offer a more complete immunity from phthisis to the natives, and a better chance of cure to phthisical visitors, than is afforded by any other mere climatic influence whatever. It also appears very doubtful whether the influence really is climatic merely, and quite certain that it, at any rate, is not regularly proportionate to the mere degree of elevation of the district.

2. It is nevertheless impossible to suppose that all the benefits which have been attributed to warm southern climates were imaginary; on the contrary there is scarcely a practitioner who has not seen the greatest benefits accrue from sending consumptive patients to climates which, compared with their own, may be called, on the whole, decidedly mild and equable. Note here, however, two points. With very few exceptions those climates which have been popularly associated with this idea are, in reality, both much less mild, and much less equable, than the majority either of patients or even of medical men are accustomed to think, until they have had personal experience.

And secondly, those who are in the habit of analysing results with care have often noted this singular fact—that patients who have returned from wintering at such places, where they had expected to be bathed in the luxury of the *ideal* “Italian” climate, complaining bitterly that they have been starved with cold, and really giving evidence in some particulars of apparent increase of catarrhal mischief for the time, do nevertheless appear after a short interval to show the unmistakeable influence of their winter sojourn, unpleasant though it has proved to them.

3. A more important practical observation than any other, except that of the influence of elevated health-resorts, is the discovery of the extraordinary value of *long sea-voyages*, which, during the last few years, has been increasingly impressing itself on the medical mind. It is, perhaps, not too much to say, that we are now certain the voyage itself was the only really beneficial agent in the otherwise mistaken and disastrous practice of sending consumptives to Madeira.

4. The kind of alimentation and medication which alone are useful is now pretty well settled; the only question which remains open being the degree of development that may be given to the use of certain metallic tonics, especially arsenic, which seems to offer the good results of iron *plus* an unknown, but probably very valuable, influence on the nervous centres.

5. The question of the kind and amount of physical exercise to be enjoined or permitted offers serious difficulties: but it also, so we think, promises to shed indirect light on the general climatic question. It is, on the one hand, known that great benefits often result from the mere influence of the free use of open-air exercise, independent of temperature or the other features of climate. It is, on the other hand, loudly protested by some of the most experienced practitioners,¹ that nothing more frequently ruins a patient's chances of recovery than the incurrence of muscular fatigue. Now let us turn to the instance of long ship-voyages, a mode of treatment which is quite indisputably successful in a great number of cases—does it not strike the reader forcibly, on reflection, that one most important circumstance of ship-board life is its *lazy, effortless monotony*, giving nearly perfect *rest*, if one may say so, to both bodily and mental muscles? Now, the other grand feature of life on a ship is the *constant and copious inhalation of air free from organic impurity* and charged only with matters (especially, perhaps, chloride of sodium) which are directly beneficial to nutrition and general health. Does it not seem as if there were, after all, a common measure, discernible if not completely definable, to all the various plans of hygienic treatment for consumption which of late years have commanded any wide support from medical men? It appears to

¹ We may mention that Dr. Burslem of Bournemouth has particularly enforced this view, in conversation with us.

us that we may tabulate side by side the elements of equal success from either of two modes of treatment :

1.	2.
Prolonged residence in a high but fairly sheltered mountain valley.	A prolonged ocean voyage.
Free carriage exercise, little or no walking.	Free exposure on deck, only gentle and slight walking exercise.
With, of course, all proper precautions about warm clothing, and the avoidance of draughts indoors.	Same precautions about sufficient clothing, and avoidance of draughts, getting chilled with wet clothes, &c.

If this view be ultimately justified by larger experience, it will then, we think, be obvious that by either of these two plans we offer, in a regular and necessary manner, all those advantages which are only partially and in an uncertain and fluctuating way afforded by the fashionable health-resorts of which the Riviera may be taken as the type ; and that there is no evidence that the latter really possess special advantages of their own. The copious inhalation of an air comparatively free from organic impurities very probably accounts for five-sixths of all the benefits received at such places ; and to the pleasing novelty of a foreign residence we should be inclined to attribute the rest.

Dr. Tanner's Clinical Medicine. Second Edition, revised and enlarged. By TILBURY FOX, M.D. Lond., Physician to the Skin Department of University College Hospital. London : Renshaw, 1869.

It does not properly fall within the province of this journal to review works like the above, since therapeutics are not included in it. But we cannot refrain from saying a good word or two for a book which is well calculated to help the student in laying that foundation of sound clinical knowledge and diagnostic skill without which all his attempts at therapeutical experiment and observation will be useless. The first edition has been for some time out of print, and the author has done well to engage the assistance of Dr. Tilbury Fox in making the new edition an adequate representative of the present resources of clinical diagnosis. That gentleman has carried out the task with great energy and ability, and has made very important additions to the information contained in the original volume. Altogether, the result is a handbook which the student who is beginning to attend hospital practice cannot too soon purchase and diligently read, but which will also be found very serviceable to the qualified practitioner.

Clinic of the Month.

Treatment of Scarlet Fever.—In a sensible paper on scarlet fever, by Walter Fergus, the following remarks, in a somewhat less condensed form, occur. Medicines easily become poisons in scarlet fever; a smart purge or a repeated emetic not unfrequently changes a moderate and regular attack into one of peril, increasing the danger of all the symptoms. Next to a good supply of air and a comfortable bed, quietness is of the utmost consequence; a fussy nurse, or over-anxious parents, turn the scale against the patient with unerring certainty. An emetic of sulphate of zinc and ipecacuanha wine in the *earliest* stage of the disease is of use, helping, as it generally does, reaction; but it should not be repeated with a view of cutting short a disease which will run its course. If the patient can be kept alive for from seven to nine days, he will most probably make a good recovery. After the emetic the patient should be allowed to sleep as much as possible; the more he sleeps on the first two or three days of the attack, the better. Two remedies have proved almost equally useful. Chlorine gas in a sweetened solution is most grateful to the patient, and evidently helps him in his battle; but a better medicine is the liquor of acetate of ammonia, with a considerable excess of carbonate of ammonia, with ten minims of spirit of nitric ether in each dose. It should be given in doses repeated with greater frequency in severe cases. Gargles are useful in cooling and relieving the throat; a weak solution of chlorine gas sweetened, or of Condry's fluid, answers well as a gargle. It is a good practice to make a patient gargle before taking food or medicine. Nitrate of silver or strong hydrochloric acid must be used if there is much blocking up of the fauces, or grey patches on their surface. Ice is of immense use where there is either great throat affection or sickness. The pleasantest drink is soda-water given freely, with wine added when required. The disease seems to produce a stretching or distension of all the soft structures, and the treatment should therefore be directed to the restoration of the tone of these structures. With this view, iron and quinine may be given early. From the fifth or sixth day, six grains of the sulphate of iron, magnesia, and quinine, should be given *with* the ammonia draught, and this mixture may be continued till convalescence

is complete. The external treatment is of great importance; rapid sponging with vinegar and water is called for if the patient do not sleep, or if there is much irritation of the skin. In cases with extreme development of the rash and burning skin, the cold douche, rapidly given, acts like a charm. The patient, placed in a sponging bath close to the bed, has four or five wash-hand basins of cold water poured in quick succession over him, is quickly rubbed dry and put to bed, when, if the treatment has done good, he drops off to sleep almost at once. In the early stages warm baths do harm, nor should they be used until a certain amount of restoration of tone has taken place. Anointing the patient with fatty substances early in the disease is not likely to benefit the patient; it may arrest to a certain extent the diffusion of the separated cuticle. Scrubbing the skin with carbolic acid soap ought to be postponed to a late period of the disease. Before the restoration stage is reached, every exertion on the part of the patient should be avoided. Close stools near to the bed should be provided, and always kept charged with a disinfectant. A well-regulated and sufficient diet, with a change of air as soon as a removal is prudent, completes the recovery. Occupation, and especially mental occupation, must be cautiously resumed. Long after recovery the brain frequently shows signs of slow restoration of power. (See *Lancet*, Nov. 20.)

Treatment of Diabetes by means of Milk Diet.—Dr. A. Scott Donkin strongly advocates this mode of treatment, not only in cases of diabetes, but in Bright's disease, disease of the supra-renal capsules, &c., and considers it far preferable to the purely meat diet suggested by Home, and systematized by Rollo. He, however, considers it requisite that its employment should be persevered in, methodically and exclusively, until convalescence is established, otherwise the result will not be successful. He remarks that the rapidity with which milk acts is truly surprising, twenty-four hours being sufficient to effect marked improvement; the quantity and density of the urine suddenly fall, and *pari passu* with this change the thirst and voracious appetite disappear, the skin becomes moist and perspiring, while the symptoms referable to the nervous system are rapidly relieved; profound refreshing sleep succeeds to the previously sleepless, restless condition, rendered almost intolerable by the incessant thirst. In one case now under his care, by milk diet, and without any other remedy whatever, the urine fell from 23 pints, specific gravity 1038, to 9 pints, specific gravity 1040, in twenty-four hours; and to 6 pints, specific gravity 1038, at the end of the third day of treatment. In other words, there was a diminution of 14 pints of urine, and about 193 grains of sugar, in

twenty-four hours; and of 17 pints, and almost 243 grains of sugar, in three days. He attributes these advantages to the circumstance that the caseine of milk, being a primitive albumen, is infinitely superior as an agent of nutrition to the albumen of muscle, which has been highly and specially organized to perform an important vital function. Besides, the sugar which milk contains is quite innocuous in the disease (as shown by his experiments), and it supplies the system with a saccharine proximate alimentary principle equivalent to such as is afforded by vegetable food. (See *Lancet*, Nov. 27, 1869.)

Hypodermic Injection of the Salts of Mercury.—Dr. T. J. Walker records the results of his experiments on the curative effects of the hypodermic injection of corrosive sublimate on syphilis, a mode of treatment to which attention has already been called in these pages. In ten cases in which it was fairly tried he found there was immediate improvement after one or two injections. In the first case, after three weeks of treatment, and the injection of only seven-tenths of a grain of bichloride of mercury, the change in the condition of the patient was surprising; and although, unfortunately, the patient was prevented by her leaving the neighbourhood from following up the treatment, when last seen, though not perfectly cured, she was in a very much better state of health. In Case 2 those symptoms which were rather of the secondary type were all relieved after six injections, and the tertiary symptoms yielded with unusual rapidity to the iodide of potassium, when it was commenced. Dr. Walker states, his further experience leads him to the conclusion (which our knowledge of the action of mercury, administered in the ordinary way, would lead one to suppose), that in tertiary syphilis, whether affecting the bones or the skin and connective tissues, the hypodermic injection of the salts of mercury can in no degree take the place of the iodide of potassium. In Case 6 the very rapid and decided change in the appearance of the iris, after three doses of a tenth of a grain of the bichloride had been injected, was most remarkable. The strength of the solution injected amounted to one-thirtieth of a grain of the bichloride dissolved in ten drops of water and glycerine. Such solution may be used every day. Dr. Walker states that the pain and inflammation at the seat of puncture are comparatively slight, and considers the results he has obtained justify its trial in large institutions. (See *British Medical Journal*, Dec. 4, 1869.)

Treatment of Pustular Conjunctivitis with Arsenic.—Dr. C. Ritchie, of Manchester, records a case in which this disease, associated with herpes zoster affecting the greater part of the left side of the head and trunk, was cured with two-drop doses of liquor arsenicalis with quinine and iron, three times a day,

after regulating the bowels, generous diet, plenty of open air, exercise, and weak alum collyrium. Under this treatment the cutaneous eruption rapidly disappeared, and simultaneously the eye got well. Dr. Ritchie remarks that this case supports the theory of Stellwag von Carion as to the origin of phlyctenular ophthalmia, which he considers to be an herpetic eruption of the cornea and conjunctiva, in fact a neurosis of the ciliary nerves. (See *British Medical Journal*, Dec. 4, 1869.)

Tetanus Nascentium treated with Alcoholic Extract of Calabar Bean.—The patient, a large, strong, and healthy-looking female child, was born Sept. 8, 1869. It went on well till Sept. 12, when it began to fret and refused to be nursed, and at 6 P.M. had a spasm. The jaws were stiff, with the mouth full of froth; the masseters rigid, forearms flexed, and thumbs drawn across the palm. Respiration and pulse very rapid. A twelfth of a grain of the extract was administered at first, but the spasm becoming more frequent and severe, one-eighth of a grain was administered every half-hour, and subsequently every ten minutes, but the patient ultimately died. Dr. Sherard, under whose care the child was, states that though no benefit was here observed, he should still feel inclined to try it again in a similar case, as Dr. Monti cured three out of four cases, and Dr. Watson reports two cases of traumatic tetanus cured by its use. If employed, Dr. Watson reports that its effects are very short-lived, and the doses must be frequently repeated to keep up its effects. (See *New York Medical Journal*, Nov. 1869.)

Therapeutics of Cutaneous Diseases.—Dr. McCall Anderson, in the first of his Lectures on Diseases of the Skin, calls attention to various points in the therapeutics of these diseases. He is of opinion that there need be little dread of danger to the system at large from “driving in” an eruption, except perhaps in the case of eruptive fevers. He observes that in Germany, and especially in Vienna, local treatment is principally relied upon, while in England constitutional treatment appears to be too exclusively resorted to. He dwells on the point that local applications have not a merely local action, but that they are absorbed and often react on the system at large—a fact that is admitted and acted upon in the case of mercury, but is not less certain in some other cases, as in that of tar, which often produces nausea, vomiting, and diarrhoea. He notes also that local applications are, from various causes, far from uniform in their action. When scales or crusts are present they should be removed, both for the sake of diagnosis and to facilitate the action of local remedies, and their removal may be accomplished by thoroughly soaking them with almond oil and subsequent application of warm water, or by the agency of a poultice of crumb of bread

and hot almond oil, or in psoriasis by means of potash applications. Where acute inflammation is present, local applications should be dispensed with, or should be of a soothing nature. In tinea sycosis, however, the hairs should be extracted. He finds hydropathic treatment beneficial, especially in cases of either acute or chronic general psoriasis, and the shower-bath sometimes yields good results. Hard or sea water should, as a general rule, be avoided in the treatment of cutaneous affections. The best absorbent powders to be used in cases of acute inflammation, such as erysipelas or shingles; and also where there is a tendency to moisture, and it is desirable to keep the parts dry, are powdered starch, oxide of zinc, lycopodium, talc, and the carbonates of magnesia and zinc: when burning heat or itching is complained of, a little camphor may be added. Amongst the ointments the best are the benzoated oxide of zinc, which is much improved by the addition of two drachms of spirit of camphor to each ounce of the ointment. Another very soothing ointment is one containing bismuth, as in the following mixture:—Subnitrate of bismuth, $\bar{3}$ ss; simple ointment, $\bar{5}$ vj; oil of roses, $\frac{1}{2}$ a minim. Soothing lotions are sometimes of service for the relief of uneasiness; indeed they are not unfrequently curative in cases of acute eczema impetiginodes of the face, for example. Those containing lead and soda are amongst the best, and may be used in the following forms:—(a) Solution of subacetate of lead, $\bar{5}$ j; glycerine, $\bar{5}$ iv; distilled water, $\bar{5}$ vj: (b) dilute hydrocyanic acid, $\bar{5}$ ij; bicarbonate of soda, $\bar{5}$ j; glycerine, $\bar{5}$ iv; rose water, $\bar{5}$ vss. The parts should be frequently sponged with these lotions, or pieces of clean rag dipped in them may be kept constantly applied. (See *Lancet*, Nov. 20, 1869.)

Treatment of Constitutional Syphilis.—Dr. Lebert states he now applies courses of inunction for constitutional syphilis much more frequently than formerly, and uses with relatively less frequency the courses with pills containing sublimate or protoxide of mercury, which act very slowly, disturb digestion, and, after long continuance, produce in the mouth disagreeable after-effects, no longer of a syphilitic nature, which molest the patient, and in spite of all assurances make him uneasy. Salivation produced by any mode is injurious, and is therefore to be avoided. The syphilitic patient is anæmic, and his nutrition is impaired. Low diet and hunger, therefore, do not act beneficially, but have an injurious effect. Long seclusion in a small room at a high temperature adds to the disease the sickening effects of confinement. M. Lebert states that the average quantity of blue ointment to be used daily is half a drachm, and he often obtains a very good effect in inveterate cases from administering the iodide of potassium in addition. (See *Medical Times and Gazette*, Nov. 20, 1869.)

Cases simulating Venereal Disease.—An interesting paper has been written by Dr. J. Waring Curran on this subject, giving an account of two cases of esthiomene, showing the importance of searching and particular inquiry into the general history and precise phenomena of the complaint, in order to arrive at an accurate diagnosis. In one of the cases, a lady, accompanied by her husband, came to seek advice for some intractable ulcers about the genitals. Two practitioners had previously pronounced the disease to be syphilitic, and had treated it with mercury. Very naturally she had accused her husband of infecting her, and they consequently lived very unhappily together. The patient appeared to be a woman of relaxed habit of body and scrofulously cachectic. Upon the retirement of her husband—a most respectable and respected member of society, who declared emphatically that he never, at any period of his life, suffered from venereal—Dr. Curran proceeded to examine the sores. Upon the left labium there existed a deep, corroding, glassy-like ulcer, somewhat oval in shape, about the size of a florin, one-third of which occupied the inside, and the remaining two-thirds was situated on the external surface of the *labium majus*. The edges of the ulcer were elevated, and indurated and well formed; thick yellow pus exuded from the surface of the sore. Two small ulcers, of a strikingly chancreous character, were to be seen on the right labium, but quite in the shade when contrasted with that on the opposite side. They appeared what might result if the cutis vera and subcutaneous cellular tissue were punched out; and the parts surrounding, in truth the entire genitals, demonstrated a congested, infiltrated, and unhealthy appearance. The glands in the groin were slightly enlarged, there was a persistent leucorrhœa, the woman was five months *enccinte*, and secondaries had never manifested themselves. To satisfy himself that the ulcers were really syphilitic, for the surroundings of the case were against this view, no secondaries had appeared, and the sores were *in statu quo* for weeks, Dr. Curran took the husband into consultation, and proposed inoculation with matter from the sores, explaining, at the same moment, the precise nature of such a procedure. The promptness with which both acceded went far to convince him that the husband was not an erring party. Dr. Curran inoculated his patient in two places on the left thigh with matter obtained from the largest sore, and in two places on the right thigh with matter from each of the smaller ulcers, and then awaited the issue. The application of carbolic acid and glycerine was directed to the old ulcers, and that they should be frequently cleansed during the day by washing with alum water. Full doses of quinine and iron were prescribed, a nutritious regimen and method of living suggested, and she was advised to return in three days. The result was exceedingly

satisfactory. No inoculation occurred, and Dr. Curran felt himself justified in assuring both husband and patient that the complaint, although suspiciously situated, was not of a syphilitic character, and had thus the pleasure of reconciling them to one another. His opinion was subsequently verified by the following results:—1st. The smaller of the two sores on right labium healed over in ten days, the other in twenty-three days, and the deep corroding ulcer on left side, which presented a truly formidable appearance, in seven weeks. 2dly. No secondaries have ever manifested themselves. 3dly. At the full period the woman was delivered of a well-nourished child free from blemish. 4thly. The husband never became affected in any way. The only question that arises to our minds is as to how far the non-inoculation of the wife with the matter is conclusive as to the innocent character of the sores. (See *Medical Mirror*, Nov. 1869.)

As a therapeutic agent hydrate of chloral is *the* sedative of violent pain in gout; of the atrocious sufferings occasioned by nephritic colic, and dental caries; in a word, it is the very best of anæsthetics administered through the stomach. Lastly, it is the quickest and most efficacious remedy in intense chorea, when it is required to abate speedily a condition of restlessness, which is in itself a peril to the life of the patient. (See *Lancet*, Nov. 20, 1869.)

Extracts from British and Foreign Journals.

On the Propriety of bandaging after Parturition, or when Ribs are fractured. — Dr. Ryer remarks that the abdominal parietes towards the latter part of gestation are so distended in many instances as to be incapable of returning to their pristine condition. The abdominal viscera, by the act of delivery, lose the support to which they have become accustomed; and hence follow exhaustion, faintings, and even mania. The necessity of support and pressure to remedy this state of things has long been recognised, and very generally practised. But every cloth bandage that a recently delivered woman can support will work upwards from the hips to the waist, since the latter is smaller, and the bandage at once becomes ineffectual, if not injurious. But another objection to bandaging is that it tends to depress the uterus; for if the finger be introduced into the vagina at the moment when strong traction is made upon the bandage enveloping the abdomen, the uterus may be felt to descend to a considerable extent: hence a bandage too tightly drawn, or too long worn, will encourage prolapse. A case of pendulous belly was treated with such success by Dr. Ryer, with adhesive strips instead of a bandage, that he has since frequently adopted the plan. The method of bandaging Dr. Ryer has practised is to take about three-fourths of a yard of the adhesive plaster and cut it in strips parallel with the warp, so that each strip is one and a half inches wide, and long enough to extend from three or four inches from the spine on one side, over the abdomen, to within three or four inches of the spine on the other side. Having cut the entire piece into strips (say ten), and warmed them, he commences at the lower part by drawing the heated plaster from the back of the hips—where the assistant presses the end against the skin—tightly over and above the pubis, and around to the corresponding place on the opposite hip. Thus is applied each strip above the other, until we arrive at the umbilicus, in some cases one inch above; but too high bandaging is subject to some of the objections attached to the ordinary system. As adhesive plasters slip and stretch, they should be applied tightly drawn, gathering the looseness and folds of integuments under the plaster. These folds disappear within a few hours after bandaging. Having thus applied successive strips from below, upwards to the umbilicus, we commence again below, and over the first we apply a second layer of

adhesive strips. The object of this second layer of strips is to give body and firmness to the first, for the abdomen in its lower part requires all the support the most ingenious can give. Thus the inferior portion of the abdomen becomes incased by adhesive plaster, whilst the epigastric region is free, and the relief is often so great, when properly applied, that patients who have lain upon the bed one or two weeks, bandaged with cloth, will, upon the application of this casing of plaster, ask permission to sit up or to leave their beds. But there is one drawback to the use of the adhesive bandage; and that is, with some an itching occurs, about the fourth day. This itching passes away by removing the bandage, washing the parts with warm water, and immediately renewing the bandage by fresh adhesive strips, as at first. Similar to the usual manner of bandaging after labour is the bandaging by rollers and towels when the ribs are fractured. This cumbersome and unphilosophical wrapping around of the chest, by its heat and pressure, is more likely to produce internal disease than hasten the union of the fractured ribs. Disarranged, loosened, and displaced as soon as applied, they are ineffectual, except for evil. Without pressure upon the lungs the ribs can be held perfectly still by the judicious application of adhesive plaster, prepared as above mentioned, in strips of one and a half inches in width. Commencing at the sternum, apply the strips obliquely downwards and backwards on the side affected, to the lumbar region; having applied several of such strips, a second layer over the first may be used for the purpose of giving firmness. For the fracture of ribs upon one side it is not necessary to embarrass the opposite side with bandages, as is so often practised. From personal experience following the fracture of a rib, Dr. Ryer has satisfied himself that the ribs may be held quite as much at rest by the adhesive plaster drawn from the sternum to the lumbar region on the side affected, with the side not affected free from restraint, as they can be by the tightest roller. (*California Medical Gazette*, Nov. 1869.)

Dr. Dieulafoy's "Aspirateur Souscutane."—Under this name an instrument has been suggested by means of which effusions into synovial or serous membranes, collections of pus or blood, and even hydatid sacs, may be safely evacuated. It consists of an instrument resembling a subcutaneous injection syringe, with a terminal and a lateral tube fitted with stopcocks, to which a *capillary* trocar can be fitted, so that after withdrawal of the morbid liquid an injection may be practised without removing either the trocar or the pump. (*Med. Times and Gazette*, Nov. 20, 1869.)

Casati on the Employment of Buxin against Intermittents (*Gazz. Med. Ital. Lombard* Nov. 30, 1869).—The em-

ployment of sulphate of buxin has recently been recommended by Gaspare Pavia, a chemist, as a febrifuge, and has been tried by Dr. Casati. He experimented on forty-five patients, twenty male and twenty-five female, the ages varying from five to sixty years. The type of the fever was tertian in twenty-five cases, quotidian in ten, quartan in five, tertiana duplex in one, and four were anomalous. The result was satisfactory in thirty-six cases, but in eight unsatisfactory. In each of the latter only two doses of the salt were administered, the patient desiring that quinine might be employed. Of this, one dose removed the symptoms, showing that the buxin had modified the disease, and had it been longer persisted in would probably have effected a cure. The amount taken amounted to about 15 grains, which the patient took in six or eight powders, during the period of apyrexia. In one patient seven grains effected a cure, whilst in ten adults it was found requisite to repeat the dose in order to remove the attack. A relapse only occurred in two instances. Twenty of the thirty-six cures were immediate; in the remaining sixteen, one or two slight fits were subsequently observed. The salt did not in any instance produce any injurious effects, except perhaps in one, in which the second dose produced some faintness. All the intermittent cases treated were free from complications. Buxin acts like quinine and with the same energy in moderate cases, but in severe cases quinine is preferable. Buxin is in general to be preferred to quinine on account of its superior cheapness, and is especially to be recommended in those cases in which there is some idiosyncrasy on the part of the patient, rendering quinine an objectionable remedy. (*Wien Wochenblatt*, Oct. 13, 1869.)

Therapeutic Effects of Mechanical Vibratory Motion.

—A paper containing the results of inquiries made on this subject has been published by Dr. Taylor, of New York, in the *Medical Journal* of that city. The inquiries were made on several hundreds of patients labouring under various kinds of maladies. Dr. Taylor regards vibration as a rapid wave-like motion, propagated in constant series through the soft yielding substance of the body, from a convenient external point. The action consists of a rapid displacement and replacement, and consequent alteration of the cells, fibres, and membranes that are in proximity, together with displacement of the fluid contents of these structures, and of the fluids in which they are bathed. He draws attention to the agreeable sensations and the remedial effects well known to be produced by friction, and contrasts this mode of producing motions of the deeper lying parts with that which he now introduces to the profession, of imparting a series of very light, rapid strokes, directed perpendicularly upon some

portion of the body. Such strokes cannot be satisfactorily performed by the hand, as the operator soon becomes fatigued, and it consequently became requisite to invent some apparatus by which such strokes can be effected. After much research and numerous experiments Dr. Taylor has constructed a series of machines capable of the various uses hitherto found desirable. In one form of the instrument slight taps are made; in a second a rubbing movement; and in a third method, which is limited to the extremities, the limb is oscillated upon its axis with a short, quick, reciprocating movement. The degree of rapidity with which these vibratory movements may be applied generally ranges between one and two thousand vibratory acts per minute. The more rapid rate produces effects somewhat allied to those of a diffusive stimulant, except that it is more permanent, and is not followed by any sign of depression. The time during which any portion of the body may be subjected to vibratory action will depend on the pathology of the case. In paralysis the instrument may be used without stint, but in some forms of nervous affection it requires caution in its application. One of the most direct and conspicuous of the effects of vibration is an increase of temperature, not, however, rising above the natural standard, and sometimes followed by perspiration. This effect Dr. Taylor attributes to increased oxidation, occurring in the fluids and tissues. Vibration also causes elimination of waste products. It is an excellent revulsive. It removes capillary congestions, and finally it promotes absorption. (*New York Medical Journal*, Nov. 1869.)

Mrs. Winslow's Soothing Syrup.—A practitioner writes to the *California Medical Gazette* stating that having recently seen a child in a state of narcosis, to whom no medicine except this soothing syrup had been administered, and this only to the extent of two teaspoonfuls in two hours, sent some of it for analysis to a skilful chemist. On examination, it was found that there was of morphia and other opium alkaloids very nearly one grain to the ounce of syrup. The printed directions are, "For a child under one month old, six to ten drops; three months old, half a teaspoonful; six months and upwards, one teaspoonful, three to four times a day till free from pain. In dysentery repeat the above dose every two hours, until the character of the discharge is changed for the better." So that here we have a dose of morphia equal to ten drops of laudanum given to a child of three months old every two hours, and double the quantity to a child of six months old! The specimen of soothing syrup analysed was made by Curtis and Perkins, of New York, who are the only manufacturers. It has been ascertained that there are about 100,000 two-ounce bottles sold

annually in San Francisco alone, containing therefore 180,000 grains of morphia, given annually to the babies in California. No wonder one-third of them die before they reach the age of two years. (*California Med. Gazette*, Nov. 1869.)

Antagonism of Morphia and Atropia.—A good example of the antagonism of these drugs is referred to in the *Medical Times and Gazette* for Nov. 20, as occurring in the practice of M. Béhier. In this case an old man took a solution of sulphate of atropia, prepared for ophthalmoscopic purposes, containing one-fifth of a grain. He experienced an acid taste in the throat, slight embarrassment in the movements of the tongue, muscular weakness, a difficulty in walking, soon amounting to impossibility, and disturbance of vision. M. Béhier, knowing the antagonism of morphia and atropia (described by Gräfe in 1862), prescribed ten drops of laudanum every ten minutes. Each dose diminished the intensity of the symptoms. The patient took on the whole seventy-six drops—a dose which, if he had not previously taken the atropia, would have undoubtedly produced symptoms of poisoning by opium.

Treatment of Neuralgia by Electrization.—Drs. Rockwell and Beard in some observations on neuralgia state, as the result of their experience, that neuralgia in all its varied forms—constitutional, centric, peripheric, and reflex—is susceptible of relief by the method of electrization, either general or localized. They agree with ourselves in thinking that various circumstances render it probable that many cases of neuralgia depend on atrophy, or a tendency to it, in the posterior roots of the affected nerve, or of some portion of the grey matter of the central nervous system. They contend, however, that this can by no means be accepted as a general law, being disproved, in their opinion, by the many neuralgias that occur from merely local causes, such as pressure, ulceration, &c., in constitutions where no hereditary tendency to nervous conditions exists, and before the injury to the nerve itself could possibly impair the vitality of any portion of the grey matter of the nervous centres. They have found, as a rule, that the neuralgic pains of locomotor ataxy are very decidedly relieved by electrization in some form. The pains accompanying spinal congestion are also frequently ameliorated by the same method of treatment. In ataxy the descending faradaic current has generally succeeded, but they have recently had a case in which the faradaic current proved ineffectual, whilst immediate benefit was experienced from the first application of the galvanic current from thirty-two cells of Stöhrer's battery. In regard to peripheric neuralgia, or that form in which the cause is supposed to be seated not only external to the nervous

centres, but also in some portion of the very nerve affected—amongst such causes may be enumerated neuritis, or perhaps more frequently inflammation of the neurilemma or sheath of the nerve, neuroma, continued action of cold, debility or excessive fatigue—mild cases of such disease readily yield to treatment, or recover spontaneously. Others, of a more severe and persistent type, are frequently met with, but are successfully treated by the internal administration of quinine, valerianate of zinc, colchicum, &c., as well as by a variety of local applications. Not unfrequently, however, all the ordinary internal remedies and external appliances prove unavailing. It is in such instances, well illustrated by the following case, that electrization is frequently followed by admirable results. Mr. M——, aged 65, a man who had enjoyed most excellent health all his life, stated that he suffered acutely and almost constantly during the day from a persistent and aggravated form of facial neuralgia. When in perfect repose, as in the night after retiring, he suffered but little and slept soundly; but whenever he attempted to converse or to eat, or in any way to use his jaw, a sharp shooting pain of a most intense character, and attended by an increased flow of saliva, was excited along the course of the fifth pair. *The action of the direct rays of the sun invariably produced the same result.* Some four years previously, while at dinner, he first felt an acute pricking pain under the ear. These attacks annoyed him occasionally, but in the course of twelve months they became more frequent and severe, and for the last two and a half years he had suffered as stated above. The first application of the faradaic current gave him immediate relief. The paroxysms of pain were excited less readily, were less severe, and not so prolonged. He continued to improve under the influence of three more applications, but in order to hasten the cure, an inverse galvanic current, from eight cells of Stöhrer's battery, was substituted. The effect was temporarily disastrous. The paroxysms of pain returned with all their former severity. Fortunately, however, a few gentle applications of the faradaic current repaired the evil produced in this case by the galvanic, and *in less than six weeks* from the commencement of treatment, and after having received fifteen applications, he had so far recovered as to be unconscious of pain during the ordinary efforts of talking and eating. No relapse has occurred during the six months since treatment was discontinued. Lastly, as regards reflex neuralgia, they believe there is no question that electrization may frequently prove of service by its power of allaying local irritation, and giving tone to relaxed parts, though of course cases referrible to carious teeth, uterine disease, &c., must receive appropriate treatment directed to those conditions. (*Medical Record*, Nov. 1, 1862.)

Notes and Queries.¹

THE ACTION OF SMALL DOSES OF IPECACUANHA.—It may save some trouble to intending correspondents if we define a little more accurately the kind of evidence on this subject which we desire to collect. With every wish to be courteous and fair, we must decline to receive statements about the action of infinitesimal doses. Life is short, and the space of our journal is limited; we really cannot, therefore, recommence a controversy which is only kept open by gentlemen who decline to be guided by the ordinary principles of evidence accepted by men of science, whether medical or any other. The question before us is a totally different one:—What is the effect of administering a quantity of ipecacuanha, not inferior, or only slightly inferior, in total amount to the doses recommended in the class-books, but divided into minute portions which are administered with great frequency? Is it or is it not the fact, that such a mode of administration, such a *gradual* impregnation of the blood with the remedy, produces simply *toning* effects upon the sympathetic and the visceral branches of the par vagum; arresting vomiting in one direction, congestion of bronchial and alimentary mucous membrane in another, and excessive secretion in a third? To any one not prejudiced by a foregone conclusion we think it will be evident that this is an entirely new question, and has no relation whatever to the old dispute between the homœopaths and the (for the most part imaginary) allopathists.—ED. PRACTITIONER.

On this subject Mr. R. Colquhoun writes to us as follows:—"In a note to Dr. Phillips's article this month, you call for further evidence as to the power of small doses of ipecacuanha in controlling vomiting. As a slight contribution to that evidence, perhaps you may deem the following case worthy of notice. On 6th November I was asked to see a Mrs. S——, who was stated

¹ The Editor, being desirous of making this department a useful medium of communication between practitioners, will be glad to receive short notes on theoretical or practical points in therapeutics,—brief jottings on those numerous queries which suggest themselves from time to time to a medical man as he "goes his rounds," but which he has neither the time nor, in some cases, the opportunity of answering. The Editor does not pledge himself to reply to every question addressed to him, but he hopes to make the "department" the means of supplying the information required; and this he can only effect by the hearty assistance of his readers.

to have been suffering from severe and uncontrollable vomiting for some months past. Patient is thirty-five years of age—bilious temperament—three months advanced in pregnancy—is much emaciated—tongue very foul, and mouth filled with thick, viscid mucus, which she constantly keeps spitting. States that she has been suffering from vomiting for over two months—is daily getting worse—vomits every half-hour, and can retain nothing on her stomach. Has had three children, and suffered for several months in a like manner during each of her previous pregnancies, but has never been so bad as she is on this occasion—could never get anything to do her good. ‘Effervescing draughts—two table-spoonfuls every three hours,’ &c. &c.—she has taken *ad nauseam*. Ordered minim and half doses of vin. ipec. in water, to be taken frequently. 8th November: Find patient much improved—tongue cleaning—sickness not so troublesome. 15th November: Vomiting has entirely ceased—tongue clean—appetite good—was out of doors yesterday.”

THE CONSTANT CURRENT IN PRIVATE PRACTICE.—A correspondent, “R. W.,” asks us whether any really effective, and at the same time portable, *constant current apparatus* is in existence. We think we may now venture to say, with some confidence, that the modified Smee’s battery made by Weiss and Son will answer every purpose for which a private practitioner can require such an instrument. It is undoubtedly quite portable, and, so far as we can see, it affords all the medical electrician asks of the constant current in actual practice. We have had occasion during the last three months to test pretty severely its efficiency in the class of cases where, above all others, the special qualities of the constant current are wanted: viz. in the instance of paralysed and wasted muscles which have lost all sensibility to the interrupted current; and have found its action thoroughly satisfactory. The instrument is unfortunately (and necessarily) expensive to begin with, and will probably require repairing some five or six times annually, at the cost of a few shillings each time; but the expense and trouble will be well repaid if the battery proves to supply, as we think it will, a sufficiently reliable means of using the constant current in the houses and at the bedsides of patients.

CHLORAL IN ALCOHOLISM.—Mr. Blood, of St. Helier’s, Jersey, sends us the following note:—“A case of alcoholism with insomnia, spectral illusions, and excitement of an aggravated character, has been under my care during the last week. All the usual hypnotic and sedative remedies which formerly subdued similar symptoms failed me quite. On this occasion I was fortunate in having procured lately some ‘hydrate of chloral,’ and determined on a trial of it as a hypnotic; accord-

ingly I ordered a drachm of the salt to be dissolved in six ounces of water with a little tincture of orange peel, and directed two ounces to be administered to my patient; and should sleep not be induced by the first dose, an ounce of the mixture to be given in two hours after. In about ten minutes after the first dose was given he fell into a profound sleep, which lasted for twelve hours; he awoke free from all the symptoms which had caused his family and myself so much anxiety. How grateful we should be for this invaluable hypnotic, and to Dr. Richardson all honour and praise for his researches and labour in directing us to the use of it." [In relation to chloral, we may state that we are personally engaged in a research which will be published in this journal when completed.—ED. PRACTITIONER.]

DR. MARSTON'S note on the subject of ipecacuanha, and on our remarks on the principles of homœopathy and allopathy arrived too late for insertion in the present number, as it is unusually long. It will be inserted and answered in our next issue. We shall here only repeat our decided and impartial objection to the principles both of homœopathy and of allopathy; adding that the latter is *not* the creed of any intelligent member of the so-called orthodox medical profession.

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¹ Any of the foreign works may be procured by application to Williams & Norgate, of Henrietta Street, Covent Garden, W.C.; or Messrs. Dulau, of Soho Square, W.C.

THE PRACTITIONER.

FEBRUARY, 1870.

Original Communications.

ON ATROPIA AS A PHYSIOLOGICAL ANTIDOTE TO THE POISONOUS ACTION OF PHYSOSTIGMA.

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THE subject of the antagonism between various of the physiological actions of different active substances, or remedies, has recently become a prominent one in medical science. Numerous apparently well-authenticated examples have already been accumulated, among which may be instanced the antagonism between the actions of morphia and atropia, and of physostigma and atropia on the iris and on the minute blood-vessels; of morphia and quinine on the minute blood-vessels; and of physostigma and atropia, hydrocyanic acid and atropia, and muscaria and atropia on the vagi nerves.

Inseparably connected with this subject is the more ancient one of the antagonism between the lethal actions of active substances. We cannot, however, instance any certainly established example of physiological antagonism in this comprehensive form. It is familiarly known that many eminent authorities maintain that the lethal action of belladonna may be antagonized by opium, and, conversely, that of opium by belladonna. As long ago as the year 1570, Pena and De Jobel asserted that opium diminishes the activity of belladonna; some

years afterwards, Horstius reported a case in which the effects of a large dose of belladonna were apparently cured by the administration of opium; and recently many modern writers—as Benjamin Bell, Greves, Anderson, Garrod, Macnamara, Béhier, Norris, and Constantine Paul—have published evidence which appears to favour the existence of this reputed antagonism. We are not, however, justified in regarding this evidence as conclusive, seeing that several observers of recognised ability have pronounced it to be insufficient, after a careful and strict examination of each recorded example. Further, the results obtained from experiments on the lower animals by Brown-Séquard, Camus, and Onimus, are directly opposed to the existence of this antagonism.

Within the last few months Professor Preyer, of Jena, has announced that atropia is a physiological antidote to prussic acid; and still more recently Drs. Schmiedeberg and Koppe, of Dorpat, have shown that there is good reason for supposing that the lethal effect of muscaria, an active principle derived from *Agaricus muscarius*, may be prevented by atropia. With the former researches I am but imperfectly acquainted, as I have not yet had the opportunity of consulting the author's paper; with the latter I am not inclined to be perfectly satisfied, as the authors have omitted to prove that the effects antagonized by atropia were caused by doses of muscaria that would otherwise have certainly proved fatal. The experiments of the Russian investigators are, therefore, to some extent open to the objection so ably urged by Dr. John Harley and Lemaitre against many of the recorded cases of antagonism between opium and belladonna—viz., that a lethal quantity of the poison is not shown to have been administered.

The investigation, to some of the results of which I propose to draw attention in the present paper, was commenced in April 1868. Although yet unfinished, various facts have been obtained that seem of sufficient importance to warrant this publication; for they demonstrate that, in certain animals at least, the lethal action of physostigma may be prevented in a remarkable and perfect manner by the physiological action of atropia. With few exceptions, the experiments were performed on rabbits and dogs; but I shall refer chiefly to those on the

former animal, as with it the series of experiments is at present the most complete.

The following plan was adopted, as it appeared to be the one by which the most conclusive results were to be obtained:—After the minimum lethal dose of extract of physostigma had been approximately determined for rabbits and dogs of different weights, this dose, or one considerably greater, was administered *after, along with, or previous to*, a certain dose of sulphate of atropia; and if death did not result, the same animal was killed, some days subsequently, by a dose of extract of physostigma equal to or less than that given in the combination. This extract was prepared by myself with rectified spirit; and as it is somewhat hygroscopic, it was dried *in vacuo* in order to ensure an unvarying preparation, of which each dose was separately weighed in an absolutely dry state. The sulphate of atropia that I used was the ordinary commercial substance. The extract of physostigma, as well as the sulphate of atropia, were almost invariably administered by subcutaneous injection.

In the experiments in which sulphate of atropia was administered *before* a lethal dose of extract of physostigma, death did not occur when one grain of the extract was injected fifteen minutes and thirty seconds after half a grain of sulphate of atropia; when two grains of extract were injected fifteen minutes and fifteen seconds after one-tenth of a grain of sulphate of atropia; and when three grains of extract were injected fifteen minutes after half a grain of sulphate of atropia. The rabbits employed in each of these three experiments were respectively killed, several days afterwards, by seven-tenths of a grain, by one grain, and by one grain and a half of extract of physostigma; and it is to be observed that each of these doses is considerably less than that from which the same animal recovered when sulphate of atropia had been previously administered.

In the next series of experiments the two substances were injected *simultaneously*, or almost so—an unavoidable interval of only a few seconds intervening between the two injections. It was found that death did not occur after half a grain of sulphate of atropia and one grain of extract of physostigma, after half a grain of sulphate of atropia and three grains of

extract of physostigma, and after six-tenths of a grain of sulphate of atropia and four grains of extract of physostigma. The rabbit employed in the first of these experiments received, thirteen days afterwards, one grain of extract of physostigma, and death occurred in eighteen minutes; the rabbit employed in the second experiment received, nine days afterwards, one grain and a half of extract of physostigma, and death occurred in fifty-four minutes; and the rabbit employed in the third experiment received, seven days afterwards, one grain and a half of extract of physostigma, and death occurred in thirty-six minutes.

These two series of experiments demonstrate, in the most rigid manner, that atropia, by its action on the living economy, counteracts or prevents the lethal action of physostigma. I have obtained results that are quite as satisfactory in establishing the existence of this antagonism by experiments on dogs also. One of these has already been described in a communication to the Royal Society of Edinburgh, from whose *Proceedings* I quote the following account of the experiment:—"Eight grains of sulphate of atropia and three grains of extract of physostigma, in distilled water, were injected nearly simultaneously under the skin of a vigorous English terrier dog, weighing ten pounds. The chief symptoms were dilatation of the pupils, partial paralysis, and hypnotism. Of these the first continued for several days, and the last for less than twenty-four hours. The partial paralysis continued for only forty minutes, after which the dog was in a perfectly normal condition, except that the pupils were in full dilatation, and that a tendency to indulge in sleep was manifested.

"Three weeks afterwards the same dog received eight grains of sulphate of atropia and six grains of extract of physostigma—the latter being twice as large a dose as that given in the previous experiment. Dilatation of the pupils and considerable loss of motor power were again produced; but in addition certain symptoms were prominently exhibited that were undoubtedly due to the physostigma, such as tremors and exaggerated bronchial secretion. The partial paralysis and tremors continued for more than three hours, and the dilatation of the pupils for several days, after which the dog perfectly regained its former condition.

“ In order to show distinctly that the atropia had prevented the fatal action of the physostigma given in these two experiments, this dog received, some weeks afterwards, three grains of extract of physostigma—a dose equal to that from which it recovered in the first experiment, and *only half* as large as that from which it recovered in the second. The results were, that partial paralysis and tremors were quickly produced, that the lachrymal and salivary secretions were profusely increased, and that the respirations became more and more laboured and jerking, until they ceased in death, at seventeen minutes after the administration.”

The next step in this inquiry, and that by which the practical value of the above results can be most thoroughly tested, was to administer the antidote *after* a fatal dose of the poison. It is obviously of importance that the nature of the facts observed in these experiments should be clearly understood, and, accordingly, I have thought it advisable to give a short account of two experiments of this kind.

In the first, a young rabbit, weighing two pounds and fourteen ounces, received, by subcutaneous injection, *one grain and a half of extract of physostigma*, suspended in fifteen minims of distilled water. Symptoms of physostigma action appeared in one minute and thirty seconds, but they did not assume a serious aspect until six minutes, when the rabbit had great difficulty in maintaining a sitting position. In nine minutes it fell, and rested on the abdomen, chest, and lower jaw, and the pupils were somewhat contracted. In ten minutes fæces were passed, and saliva escaped abundantly from the mouth, while the animal lay flaccidly, quite unable to move about.

At ten minutes and thirty seconds, half a grain of sulphate of atropia, dissolved in fifteen minims of distilled water, was injected under the skin at the left flank. No obvious result occurred until four minutes and thirty seconds, when the state of flaccidity somewhat disappeared, the back becoming normally curved, and within a few seconds the head was again raised, the flow of saliva considerably diminished, and the pupils slightly dilated. In eight minutes the rabbit succeeded in rising on its limbs, and sat in a natural posture; and now the exaggerated secretion of saliva was completely checked, and the pupils widely dilated.

In twelve minutes, the only symptoms present were extreme dilatation of the pupils, due to the action of sulphate of atropia, and constant fibrillary muscular twitches, which I have shown to be due to the action of physostigma.

Twelve days afterwards, *one grain and a fifth* of the same preparation of extract of physostigma was suspended in fifteen minims of distilled water, and injected under the skin of this rabbit. *Death occurred in thirty minutes.*

In the second experiment, *two grains of extract of physostigma*, suspended in twenty minims of distilled water, were injected under the skin at the right flank of a rabbit, weighing three pounds and eleven ounces and a half. In eight minutes and thirty seconds the rabbit was lying on the abdomen and chest, saliva was escaping abundantly from the mouth, the pupils were somewhat contracted, the respirations were laboured and noisy, and moist fæces were being copiously passed.

At eight minutes and thirty seconds, half a grain of sulphate of atropia, dissolved in fifteen minims of distilled water, was injected under the skin of the left flank. In four minutes afterwards the pupils were dilated, and the flow of saliva and passage of fæces had ceased. In six minutes vigorous efforts were made to rise, but these efforts were not successful until fifteen minutes. In about one hour and twenty minutes the rabbit was nearly well, though a slight degree of paralysis was still present. In one hour and forty minutes every symptom had disappeared, except dilatation of the pupils and fibrillary twitches of the muscles.

Four days afterwards this rabbit, while in a perfectly normal condition, received by subcutaneous injection *one grain and a half of extract of physostigma*, suspended in fifteen minims of distilled water. Tremors, paralysis, and great increase of the salivary and bronchial mucous secretions were quickly produced; moist fæces were by and by evacuated in profuse quantities; the pupils became contracted, and *death occurred fifteen minutes and thirty seconds after the administration.*

The experiments I have now mentioned do not in the least degree indicate the precise power of counteraction which atropia exerts against physostigma; before this can be determined, the number of the experiments must be greatly increased. It will.

however, be admitted, that they show that the lethal effects of doses of physostigma greatly in excess of the minimum fatal, may be prevented by doses of atropia greatly below the minimum fatal; and that they likewise contain a most perfect demonstration of the power of atropia to prevent the lethal effects of certain doses of physostigma. It may be said that such a demonstration, being made in the lower animals, does not admit of application to man. In reply I would urge that the actions of physostigma and atropia are precisely the same in man, and dogs, and rabbits. A marked difference undoubtedly exists between the susceptibility of man and of these animals to the action of atropia; but this difference being merely one of susceptibility, requires only that the quantity administered to man should be less than that to either dogs or rabbits, in order that equal effects should be produced. It is, besides, in our power to greatly intensify the action of atropia, by modifying the method of its exhibition. If a minute dose be directly introduced into one of the superficial veins of a rabbit, poisonous effects are very speedily produced, and thus the seeming difference in its action on man and rabbits is at once removed. I have made an experiment in which a minute dose ($\frac{1}{16}$ th of a grain) of sulphate of atropia was injected into one of the facial veins of a rabbit that had received, a short time previously, a large fatal dose of extract of physostigma by subcutaneous injection. This dose of the antidote, though but little in excess of what is frequently exhibited by subcutaneous injection to man, perfectly counteracted the lethal effect of the large dose of physostigma.

Some apology may be deemed necessary for the title of this paper, seeing that atropia has never yet been employed in man as an antidote to poisoning by physostigma. The nature of the case, however, requires that good reason should in the first place be given of the existence of an antidotal power, for thereby only can the practical application be justified, and the antidote be employed with propriety and confidence. The evidence that has been adduced of the existence of this antidotal power is of the most satisfactory nature. Indeed, the testing experiments contained in the third series are much more unfavourable to the success of this treatment than any cases which we may expect to occur; as the poison was administered by subcutaneous injection.

tion, and its action, accordingly, produced with much greater rapidity than if the administration had been by the stomach.

In treating cases of poisoning in man, the sulphate of atropia should be given by subcutaneous injection, in doses of from the $\frac{1}{50}$ th to the $\frac{1}{30}$ th of a grain. The exhibition of the antidote should be persevered with, in repeated doses, until the pupils are fully dilated and the pulse rate increased, and probably, also, until the hypersecretion of bronchial mucus, which greatly impedes respiration, is completely checked.

This is scarcely the place to discuss the interesting and important question of the exact action or actions on which the antagonism between these two substances depends. It will be sufficient to mention that physostigma increases the excitability of the vagi nerves, while atropia diminishes and suspends this excitability; that physostigma diminishes the arterial blood-pressure, while atropia increases it; that physostigma greatly augments the secretion of the salivary, bronchial, intestinal, and lachrymal glands, while atropia diminishes and even completely checks these secretions; and that physostigma contracts the pupils, while atropia, to a much greater relative extent, dilates them. Besides these effects of the action through the blood, various opposed topical effects have been observed, among which is the contraction of the veins by physostigma—the existence of which rests on the high authority of Mr. Wharton Jones—and the contraction of the arteries by atropia.

No investigation could possibly be undertaken that will more certainly advance the science of therapeutics, increase its resources, and remove the irrational scepticism with which it is in many quarters regarded, than that of the antagonism between the actions of remedies. For the object of such an investigation is to demonstrate the manner in which certain accurately defined abnormal conditions are restored to normality, by actions of an equally defined and accurately determined character.

ON COUNTER-IRRITATION.

BY JAMES ROSS, M.D.

As I have taken part in the recent discussion on counter-irritation, I hope I may be permitted to make a few remarks on some of the disputed points. As pointed out by Dr. Anstie, it is of great importance to arrive at a satisfactory definition of the term. Dr. Bennett defines counter-irritants as "agents which by their irritant action determine an increased attraction or flow of blood to one part of the body, and thus influence morbid action in some other part." He justifies this definition because, in his opinion, it fulfils one of the main requisites of a definition; namely, "that it shall contain the essential idea of the thing attempted to be defined." Dr. Bennett ought to have told us what he means by an "essential idea." As far as I can understand, an idea is "essential" because it is included in a definition, and it is not included in the definition because it is essential. But let the rule pass. The question remains as to what constitutes the essential idea of counter-irritation. Dr. Bennett thinks that the essential idea is, that counter-irritants produce their action by the increased attraction or flow of blood to one part of the body. Dr. Dickinson, on the other hand, thinks "that the idea at the bottom of counter-irritation is that of superseding one morbid action by another." My opinion is that counter-irritants produce their action by deflecting the morbid process from the course it would pursue to some other course, sometimes towards, and sometimes further from, health. Now, either Dr. Dickinson or I have as much right as Dr. Bennett has to consider our idea as the essential idea of counter-irritation. To assert, therefore, in the definition that counter-irritants produce their action by attracting blood

to one part of the body, is to beg the question. The discussion was raised in order to ascertain, not only the effect, if any, which counter-irritants produce, but also the manner in which those effects are produced; and surely it is a great mistake to include the manner in which the effects are supposed to be produced in the terms of the definition. But if what relates to the theory of counter-irritation be omitted from Dr. Bennett's definition, it will not, in my opinion, be liable to any serious objections. Counter-irritants may be defined as agents which, by their irritant action upon one part of the body, influence morbid action in some other part. I said that the definition, as so modified, would be unobjectionable, but that is only true if we wish to include under the same term irritants, both when applied in the vicinity and at a distance from the morbid part. My own opinion is that it would be more convenient to restrict the term counter-irritants to irritants when they are applied in the vicinity of the primary disease; and to designate irritants, when applied at a distance from the morbid part, revulsives, or some such name. This is a matter which involves no principle; it is purely a question of nomenclature. In all probability, irritants, when applied in the vicinity, do not act upon the same principle as when they are applied at a distance from the morbid part; therefore we ought to have a distinct name for each—and the derivation of the term counter-irritation points to it as the more appropriate designation of the former irritants. In this restricted sense counter-irritants may be defined as irritants applied in the vicinity of a diseased structure. It may be thought that the fact that the irritant is applied in order to influence the primary disease should be stated in the definition; but since one part of the investigation is to ascertain how far irritation of one part of the body really does influence disease in its vicinity, this question should not be prejudged by being stated in the terms of the definition. This definition serves to limit the extent of the investigation, without including any point which ought to be discussed during the course of the inquiry. Of course the list of agents which are to be included under the term counter-irritants will depend upon our definition of irritation; but to define irritation belongs properly to pathology, and not to therapeutics. I am not therefore about to

discuss this point further at present, but I may state it as my opinion that no definition of irritants can be framed which will include blisters and mustard plasters, and yet exclude issues and setons.

I shall now offer a few remarks upon the question raised by Dr. Dickinson. The question is, whether disease of the internal organs can be influenced by applying irritants to the surface of the body nearest the seat of the disease. Dr. Dickinson thinks "that we have no clinical evidence sufficient to assure us that a blister on the chest directs any special therapeutic influence to the lungs, or upon the epigastrium to the stomach." Dr. Bennett, on the other hand, thinks that we have clinical evidence sufficient to warrant us in believing that a blister on the chest can influence a diseased lung, even if we are totally unable to explain the facts by theory. He also adduces good clinical evidence in support of his position. We have now to decide between these conflicting opinions. In order, therefore, to come to a decision upon this point, we must endeavour to form an estimate of the importance which ought to attach to the clinical evidence in the entire absence of theoretical evidence. Clinical evidence in this case is, like clinical evidence in by far the majority of instances, merely presumptive; but however defective it may be, it is often all we have to rely upon to guide us in the practical emergencies of life. Disease, especially acute disease, is not a permanent, but a changeable state, and time is generally on the side of health. The action of the forces of nature we can neither suspend nor interrupt. All we can do by our interference is to introduce a new force amongst existing forces, and thus deflect the course of the disease; and when the deflection produced is towards health, a beneficial or therapeutic effect is produced. But when a deflection towards health takes place in a disease, especially if acute, it is doubtful whether it was produced by the forces of nature operating in time independently, nay, even in spite of our interference. It may be urged as an objection against the conclusions from such evidence, that they are instances of the *post hoc propter hoc* fallacy. But since this objection may be raised against clinical evidence in the majority of instances, it is useless to reject that

in favour of the beneficial action of counter-irritants in pneumonia because it is not entirely conclusive. I think that the medical men who have employed counter-irritation in subacute pneumonia, chronic bronchitis, and chronic gastritis, have as much clinical evidence in favour of its beneficial action in such cases as they have for most other remedies employed by them in the cure of disease. I have purposely selected those chronic cases because they are not so liable to sudden changes nor to spontaneous cure as acute diseases. The element of time is therefore, to a certain extent, eliminated, so that we can compare the state of matters existing before and after the application of the remedy. If, therefore, a sudden change ensues, the probability is that it was caused by the counter-irritant. I think I only express the opinion of the great bulk of my professional brethren, those whom Sir William Jenner calls the "silent workers," and to whose verification he justly attaches so much importance, when I say that in the great majority of such cases a beneficial effect ensues on the application of a counter-irritant. The clinical evidence, therefore, being merely presumptive, it follows that to some minds the evidence in favour of counter-irritation in disease of the internal organs will be sufficient for practical purposes; while to others, who either are of a different mental mould, or look at the subject from a different standpoint, the evidence may be quite insufficient. The latter need not necessarily be of a sceptical turn of mind. Indeed, a man who denies that a blister does good in pneumonia may be much more credulous than he who assents to the proposition. The former may, from one or two cases in which a blister has no apparent effect upon the disease, conclude a general proposition; namely, that a blister on the chest never does influence pneumonia. Such a man is much more credulous than he who notes a series of cases, and taking the cases in which the blister appears to do good, and those in which it appears to have no effect, sums up in the end in favour of blistering in pneumonia. This is true even if the conclusion of the latter turns out to be false, because he has taken greater precautions to avoid a false conclusion; and if the former turns out to be true in his conclusion, there is no credit due to him, since he has only stumbled by accident upon a true

conclusion. Dr. Bennett thinks that it cannot excite much surprise "that Pyrrhonism, the ruling philosophy of the day, should have invaded both practical and scientific medicine." But since the ruling philosophy of the day, however sceptical it may be, only denies the existence of substances *per se*—of noumena as opposed to phenomena—I do not think that any great harm can result from the invasion. The philosophy of the present day not only admits the existence of phenomena, but admits more fully than was done by the philosophy of any previous age, that these phenomena are subject to general laws; therefore both the practical and scientific physician can well dispense with pure existence and noumena. At any rate I cannot well understand how the philosophy of the day is to affect our views with regard to blistering in pneumonia, since the object of the investigation is to ascertain whether the phenomena of blistering modify the phenomena of pneumonia, and to reduce both sets of phenomena, and their relations to each other, to general laws.

But Dr. Dickinson goes much further than to deny that the clinical evidence in favour of blistering in pneumonia is insufficient. He says: "It is not easy, or perhaps I might venture to say it is not possible, to show how the deep inflammation can be advantageously influenced by such proceedings." He thinks that the "onus of proof" rests upon the advocates of counter-irritants; but now that he has undertaken to prove a universal negative proposition, the onus of proof rests entirely upon him, since he can only ask us to reject the clinical evidence in favour of counter-irritants if he can prove "that it is not possible that the deep inflammation can be advantageously influenced by such proceedings." His reason for asserting impossibility in this instance is that there is no direct anatomical connexion between the surface of the body and the internal organs. He discusses the various means by which an influence might pass from the surface to the internal organ, and concludes that it is impossible for such an influence to pass between them as would account for the effects attributed to counter-irritants. In order to estimate the value of Dr. Dickinson's reasoning upon this point, it ought to be remembered that it is theoretical, or, to speak more correctly, hypothetical. Now, before he can prove his position

he must show, not only that all the hypotheses that have hitherto been constructed have failed to account, but that no hypothesis ever can be constructed that will account, for the effects attributed to counter-irritants upon diseases of internal organs. In order to prove this he must show not only that the supposed effects cannot be deduced from any of the known properties of the tissues concerned, but that he is thoroughly conversant with all the properties of the tissues, and that no after-researches will ever reveal properties now unknown to us. For if any of the properties of the tissues concerned are unknown to us, and undoubtedly many are, then these properties may be the very properties which, if known, would account for the effects. In order to prove that the tissues of the body are endowed with properties now unknown to us, we are not left to a vague general statement of the imperfections of the sciences of physiology and pathology; because there is evidence from which we can infer that properties exist which are more or less analogous to those which would explain how a certain influence might be conveyed from the surface of the body to an internal organ. Dr. Bennett has adduced a great many instances from which this can be inferred. He instances pleurisy, pneumonia, or bronchitis supervening upon sudden exposure of the chest to a draught of cold air—bronchial affections of children being relieved by the occurrence of an eczematous eruption on the scalp, and *vice versâ*—the consensus between the mammæ and the uterus, between the testicles and the parotid, as well-ascertained facts for which physiology does not afford a sufficient explanation. Another beautiful instance of the relation which may exist between one part of the body and a distant part was given by Dr. Brown-Séquard at the meeting of the British Medical Association at Leeds. He cut the sciatic nerve of a guinea-pig, and showed that he could induce an epileptic attack by gently rubbing the skin at the back of the ear of the same side. All these cases show that an influence may pass from one part of the body to another without more direct anatomical connexion than exists between the surface of the body and the internal organs. We cannot give a satisfactory explanation of how the influence is conveyed from the one part to the other, and therefore infer that the tissues concerned

must have properties not only unknown to us, but presumably similar to those which would be requisite for conveying an influence from an irritated surface to an internal organ. Therefore amidst so much ignorance it is too much for Dr. Dickinson to say, from theoretic considerations, that "it is not possible" to produce the effects attributed to counter-irritants upon internal organs. In the absence, therefore, of *à priori* proof of the negative proposition, we must fall back upon the clinical evidence, let it be ever so faulty; and the value which ought to attach to the clinical evidence has already been estimated.

Dr. Dauvergne, as translated by Dr. Anstie in the *Practitioner* for October, denounces the practice of blistering in pneumonia. He does not, however, make any assertion with regard to the other counter-irritants; and since he does not speak on the general question, his contribution does not alter the scientific aspect of the question, however important it may be to practical medicine. He does not deny that blisters may affect the disease—he even asserts that they may aggravate it; and if this is the case, some influence must pass between the blistered surface and the disease. But even as far as practical medicine is concerned not much importance is to be attached to Dr. Dauvergne's objections. He tells us that he renounced the use of blistering after treating unsuccessfully two pneumonic patients with large blisters. This is a case of extreme credulity and not of scepticism. He, and not the country practitioner, is the man of "robust faith." The little insight he gives us into his practice prior to his renunciation of blistering, shows that he applied blisters in the very early stage of the disease when the skin was hot; and also that he bled about the same time that he blistered. Now, the practice of the present day is opposed to this. Blood-letting, if employed at all, is used in the very early stage of the disease; while blisters are applied when the skin has become moist, and when the second stage of the disease has become developed. Seeing, therefore, that the practice of Dr. Dauvergne, when he renounced blistering in pneumonia, was so much opposed to the practice of the generality of medical men, I think that the "country doctors" may be content that he should continue to find himself "in absolute opposition with them upon this point."

But, however defective may be the evidence in favour of the action of counter-irritants in the case of the internal organs, all agree that these agents produce a powerful effect when there is continuity of tissue between the part to which they are applied and the primary disease. I shall therefore go back to a point which has been somewhat neglected during the progress of the discussion: I mean the relation which ought to subsist between our theory and practice of counter-irritation. As pointed out by Bacon, we ought to have a set of intermediate propositions to stand between a science and the art founded upon it. It should therefore be our aim to arrive at such a proposition or propositions to stand between the theory and practice of counter-irritation; and if no such proposition is elicited during the progress of this discussion, I shall consider that the great object of a discussion like this is missed. I have in another place endeavoured to prove that the main intermediate proposition between the theory and practice of counter-irritation is, that irritation of one part of the body tends to stimulate the textures in its vicinity. I have endeavoured to prove this proposition theoretically, and to show that it can be inductively inferred from the facts ascertained by observation at the bedside. Dr. Anstie suggested "the stimulant view of so-called counter-irritation in 1861." I put forward a claim of priority, and that claim I now to a certain extent withdraw. Dr. Anstie thinks "that the influence of counter-irritants is not vitally depressing, but stimulating, *when they really do produce a good effect.*" The italics are not mine. He adds, "but I should deny at once, on the ground of repeated observation, that they never tend to lower vital action; on the contrary, I have seen them so lower it with most disastrous results." I do not deny that the effect which ensues from the concurrence of the force derived from the artificial irritation, and the forces existing in the morbid part, may be a "vitally depressing" one. This, on the ground of repeated personal observation, I know to be the case. But although this is true, it may be no less true that the *tendency* of counter-irritation is to stimulate the morbid textures in its vicinity. Dr. Anstie might as well say that smoke has no tendency to the earth because he has seen it

ascend. But smoke has weight, and its weight is its tendency to the earth. It ascends because it is acted upon by other forces besides gravitation. When the effect, therefore, depends upon two or more causes, the effect which ensues is no test of the tendency of one of these causes. It may therefore be true that counter-irritation always tends to stimulate the morbid textures in its vicinity, and yet that the effect which actually ensues is a vitally depressing one. A fresh stimulation may lead to a fresh accession of effusion, and ultimate destruction of the part. But whether this is true or not, it is as certain as anything can be that the objection urged by Dr. Anstie against it is not a valid one.

Since Dr. Anstie has reviewed my theory in the *Practitioner* for June, I trust that I shall not be trespassing upon the patience of the readers of that journal if I say a few words in reply. I may premise that in that review Dr. Anstie has given in a few words a good analysis of my argument; indeed it is only one who is accustomed to analyse books, and to grasp a subject as a whole, who could present the gist of a rather complicated argument in so few words. He, however, raises objections against my empirical laws which are not quite just. In the first place, he objects to these laws because they are not strictly true; or, as he expresses it in another place, they are "much too absolute." But this is the character of all empirical laws. The most perfect empirical laws for the purposes of science mankind ever possessed are Kepler's laws; yet they are not strictly true—they are too absolute. One of them is that a planet describes an ellipse in its revolution round the sun. But this takes no notice of the perturbations, and as an expression of the truth it is much too absolute. But it was this very character that gave them their chief value, since, if Kepler had endeavoured to express all the facts of the case, his description would have been so cumbrous that probably Newton would never have succeeded in unravelling the forces which caused that revolution. Therefore the question that has to be settled is whether my empirical laws are an expression of the main effects of counter-irritants; if they are, it is no objection to them to say that they are not strictly true.

But Dr. Anstie raises another objection against my theory, which is more erroneous than this one. He thinks that the empirical laws are the "foundation stones" of my theory. He says in one place: "It is impossible for me to accept this very sweeping statement as an empirical law from which we can proceed to any useful deductive process." Surely Dr. Anstie has made "a slip in his logic" in thinking that a theory can be deduced from the empirical laws of the effects. So far is this from being the case that the theory could be constructed without the slightest reference to the empirical laws; and indeed it would be possible to construct my theory antecedently to any knowledge of the action of counter-irritants upon disease.

The empirical laws are collected in order to test the theory when completed. As tests, therefore, it is only necessary that they should be an expression of the main facts of the case. I think that my empirical laws are near enough expressions of the truth to act as such tests, and more especially to test the erroneousness of the current explanations of counter-irritation. At any rate it remains for my critics to show that they are not, or to attack my theory from a different quarter, unless they admit its truth.

Dr. Anstie strongly objects to the empirical law which says that "the greater the irritation, and the deeper the destruction of the skin caused by the counter-irritant, the more marked and the more permanent is the effect." "If by this," says Dr. Anstie, "the author does not mean a curative effect, the law is meaningless." But what gives the chief meaning to this law is that I do not mean a curative effect. The empirical law was expressed in order to aid me to test a theory, therefore I was entirely in the region of science, and to the eye of science a curative effect is no more desirable than an injurious effect. Both effects require an explanation. It surely, therefore, is a very partial view to take of an empirical law to say that it is meaningless if it take cognizance of an injurious effect as well as of a curative effect. This law to which Dr. Anstie so strongly objects is, like the other empirical laws, not fully adequate as an expression of the facts; but he will not surely deny that the effects of counter-irritants vary in some measure according to the degree of the irritant. He has admitted that a blister

may aggravate the first stage of inflammation, but that the milder irritants may have a beneficial effect; he will not, therefore, object to my calling the effect when the disease is aggravated a more marked one than when it is alleviated. In chronic cases of disease which require a great deal of stimulation, Dr. Anstie will, I think, admit that *ceteris paribus* a blister has a more marked effect than a mustard poultice, a pustular eruption than a blister, and an issue or a seton than a pustular eruption. At any rate the practice of the generality of practitioners, when translated into the experimental evidence upon which it is founded, indicates that such is their opinion, since it is in cases which require the least stimulation that the milder, and in those which require the greatest stimulation that the severer, irritants are employed.

In bringing these remarks to a close, I may be allowed to express the hope that Dr. Anstie will ere long unfold his views on counter-irritation more fully than he has hitherto done. He has already promised to speak "upon the general question at some length." I look forward with no small interest to his contribution, and trust that it will throw great additional light upon this important department of therapeutics.

THE GROUP OF WELSH MINERAL WATERS.

BY JOHN MACPHERSON, M.D.

It has not hitherto been necessary to take into consideration any elements but sulphuretted hydrogen and iron, but on crossing to the Welsh group of wells another class of salts, the chlorides, appear, and especially common salt. On its properties I shall say nothing here, but remark that it is the chief constituent of a great many of the most popular drinking mineral waters in the world, and of the most important waters used in bathing, whether in the sea, or in the various salt baths of different degrees of concentration in inland places. Perhaps the best notion of the Welsh springs may be got by comparing the amount of salt per pint they contain with that contained in other salt springs. And here I must say just as strongly as of the Irish mineral waters, that accurate analyses of most English and Welsh wells are still required, and that the following comparison is only approximately accurate:—

	Common Salt.	Chlor. Magn.
Builth	66·4	—
Landrindod, Saline	35	9
„ Chalybeate	29·6	3·6
„ Sulphur	27	—
Harrogate, Montpelier, Sulphur	29·65	2·142
„ Kissingen	82·1	4·54
Moffat	22	—
Homburg, Elizabeth	76	7·7
Kissingen, Rakotsky	45	2·33
Kreuznach, Elisen	72	4
Pymont, Salt Spring	54	—

As the Prussian 16 ounces of 7,680 grains is here compared with the imperial pint of 8,740 grains, about one-eighth should

be added to the quantities in the foreign spas to make these comparisons accurate.

The Welsh springs first attracted notice about 120 years ago; they have always been resorted to more or less by the people of the Principality, and now that they are opened out by a railway, a more extensive resort to them is very naturally expected.

The first of these wells that I shall mention is *Llanwrtyd*. About half a mile from the railway station is the village, with several small hotels and lodging-houses on each side of the bridge over the Irvon; and a few yards out of the village is the principal and comfortable hotel of Dolecoed House, close to the two wells. The principal well, which is counted the most important sulphur one in Wales, contains in the pint about 8 grains of common salt and '62 inches of sulphuretted hydrogen; there is a chalybeate of fair strength close by, but there is no accurate analysis of it. There are a tolerable pump-room, and a bath which did not look to me particularly inviting. The wells are situated at the opening of a little valley; there is some wood about, and a few walks have been laid out, and seats, which last are rather dilapidated. There has been less pains bestowed on the place than on Ballynabinch. The country generally may be described as open airy upland. The bathing seems quite secondary. Now that the railway is so close, the visitors, besides wandering about the neighbouring hills, are able to have the variety of more distant excursions.

These waters have been found very useful in cases in which sulphur waters are indicated, and are chiefly employed in skin, liver, and disorders of the digestion. They have also been employed, unlike similar English waters, in bronchial irritation, and in threatened tuberculosis. The quantities of iodine and bromine present scarcely enter into consideration any more than the minute quantity of common salts. Patients usually begin with two or three glasses before breakfast, drunk with a quarter of an hour's interval between them. This season has been a good one. I was told that at the height of the season there were more than 300 visitors drinking the water.

The following is Herapath's analysis of the solid contents of an imperial gallon :—

Chloride of Calcium	7.29
Bromide of Calcium	1.66
Iodide of Calcium61
Chloride of Magnesia	192
Chloride of Sodium	58.544
Sulphate of Soda	512
Carbonate of Lime	2.08
Silica	6.48
Organic Matters	9.5
Total	86.8

There is another sulphur spring in the bed of the Irvon at Llanganmarch, but it appears to have nothing in its situation to recommend it, and it seems never to have been fully investigated. It appears to be a mild aperient, and probably contains some Glauber salts.

The river Irvon falls into the Wye, and some four miles below the junction, situated on its beautiful banks, lies *Builth*, a picturesque place, with much to make it popular besides its excellent wells. They are three in number, close to each other, and called the saline, the sulphurous, and the chalybeate. They are about a mile distant from the town, and have a pump-room. By far the best known well is the saline one. Although there appears to be no very accurate recent analysis of it, the old one of Daubeny shows a great resemblance in composition between it and the chief well at Kreuznach, and the salt one at Pymont.

	Builth, Saline.	Kreuznach, Elisen.	Pymont.
Chloride of Sodium	66.4	72.83	54
„ Calcium	11.2	13.38	Carb. 10
„ Magnesia	trace.	4.67	Sulph. 7
„ Sodium	„	{ Iodide of Magn. .035	—

As the Kreuznach water is just as deficient as the Builth one in carbonic acid, I have no doubt that the drinking of the saline of Builth will produce every effect that drinking the Elisen well at Kreuznach will do. But then there are not in Wales the strong salt baths to support the other treatment, which are so vigorously employed in Germany. The carbonated Pymont one is of course much pleasanter to drink. It is unfortunate

that so little is known in detail of the other Builth springs. Apparently one of the springs has a very considerable amount of sulphur in it. The neighbourhood of Builth is very interesting, far more picturesque than the open wells of Llanwrtyd and Llandrindod, and has a ruined castle and a moat, or dun. And if it were only possible to speak positively of the constituents of the wells, one would be inclined to say that so picturesque a spot might have a great future before it, with waters that ought to be applicable to a great variety of cases. Another analysis makes the solid constituents of the Builth spring a good deal larger than as stated by Daubeny. But the weaker analysis makes them quite as strong as is desirable for the class of waters to which they belong.

Llandrindod, however, is for the present the chief spa in Wales.

The train sets one down in the middle of an open plain with a good many new houses springing up. The common is not very attractive at first sight, although on a fine day the pleasant views in the distance relieve the scene. The saline and sulphur wells are situated some seven or eight minutes' walk from the station, among some trees, where also is the principal hotel; and further up among the trees once stood the hotel which formerly had an unenviable reputation for gambling. Public gaming tables fortunately are unknown to other English spas. The chalybeate or rock well is out on the common. The wells of Llandrindod have, owing to the healthy air of its uplands, and the real virtues of its waters, always enjoyed a considerable amount of local patronage. Dr. Linden in 1755 wrote a book of considerable interest about these wells; and there is every reason to believe that their popularity will greatly increase since the railway has made them accessible from all parts of the kingdom. This season it is said that as many as 600 visitors have been at one time taking the waters. Here too, as at Builth, the wells are classed as saline, sulphurous, and chalybeate; perhaps a comparison of the two chief wells with two very popular ones (as most people know the class of cases sent to Harrogate or to Kissingen) will give the best idea of the cases in which these waters may be expected to be most useful. Unfortunately there is some uncertainty as to the amount of chloride of magnesia

present, and still more unfortunately as to the exact quantity of iron.

	Llandrindod, Saline.	Kissingen, Pandur.	Llandrindod, Chalybeate.	Harrogate, Hospital, Mild Sulphur.
Chloride of Calcium . . .	2·06	—	1·3	—
„ Magnesia . . .	9·0	1·8	6	—
„ Sodium . . .	37·5	42·3	28	27·578
„ Iodides . . .	trace.	—	·002	trace.
„ Bromides . . .	„	—	trace.	„
Carbonate of Iron . . .	„	—	1·4?	„
„ Lime . . .	·5	7·7	·54	2·47
„ Silica . . .	·15	—	·16	·186

The quantity of the essential salt, that is, common chloride of sodium, is, therefore, much the same at Llandrindod as in either the Pandur or the Rakotsky at Kissingen; the absence, however, of carbonic acid from the former will prevent its ever being so pleasant to the palate, or indeed sit so lightly on the stomach, as the Kissingen waters.

Either, however, of the chief springs, and indeed the sulphur is much the same in all essentials, may very fairly be compared with the Hospital well at Harrogate, which Dr. Myrtle tells us is the most popular of all its wells. If he says that he has known many cases of gout and rheumatism, which had resisted a prolonged course of hydropathy as well as a fair trial of the waters of Buxton, entirely cured by them, why should we discredit similar effects at Llandrindod?

According to Dr. Richardson, of Rhayader, who has written on them, the saline is most useful in the scrofulous diathesis, and in constipated habits, for dyspepsia, chronic liver affections, and hæmorrhoids, gout, chronic rheumatism, and many functional diseases of women. The sulphur water is recommended in diseases of the skin, chronic bronchitis, rheumatism, and lead palsy. The saline water should be taken as a purgative early in the morning, in doses of half a pint every ten minutes; brisk exercise should be taken in the interval, and the quantity required will be from three to ten half-pints; however, it can never be desirable to take the larger quantity. It is recommended that the sulphur water should be taken during the first day in doses of two or three glasses, and it may be increased till ten or twelve doses are taken. But the sulphur water is

believed to be most efficacious as a bath. The chalybeate well is recommended for anemia and chlorosis; it is recommended that the dose should only be a wine-glassful the first day, and the patient is warned against flushings of the face. But they must be purely imaginary, unless the spring is far stronger than has been supposed.

At Llandeyley, about six miles from Llandrindod, are two wells, a sulphur and a chalybeate, said to be powerful, but they are very imperfectly known, as well as some similar springs in its neighbourhood. Dr. Richardson, who keeps up his interest in these wells, favours me with the following discriminating remarks :—

“I have found in very many cases that the sulphurous waters of Llanwrtyd and of Llandeyley, which are as nearly as possible alike, are very beneficial in the incipient stage of consumption. The waters are taken in the morning on an empty stomach, and a wine-glassful or two of the chalybeate about three o'clock in the afternoon, or after the principal meal of the day. A course of these waters is of use in most cases of tuberculosis and of skin complaints. The Llandrindod and Builth waters are more particularly used for indigestion and liver affections. For those patients who are of robust constitution, the Builth waters are preferable. But in cases of chronic gastric irritation, generally the Llandrindod waters are best. The experience of some years confirms most of the opinions thrown out by me in the Guide-book to the Welsh springs.”

Taaffe's well, near Cardiff, the only thermal well in Wales, and which is charged with nitrogen, does not seem to have attracted any attention since it was noticed by Daubeny.

On the whole, the Welsh group of wells is in every way worthy of further attention; and the most experienced physicians in Wales recognise their value, such as Dr. Prestwood Lucas, of Brecon. It is difficult to part from the Principality without congratulating it on its richness in sea-bathing places. Among the best known are Llandudno, Penmaenmawr of late years, Aberystwyth and Tenby, all, at least three of them, places on a large scale. The number of quiet bathing-places is very large.

THE SYMPTOMS, CAUSES, AND TREATMENT OF CYNANCHE TONSILLARIS.

BY F. P. ATKINSON, M.D.

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IT is curious how little in some cases medical treatment seems to avail, and how in spite of the means used the patient continues day after day in the same condition. Though we have the remedies at hand specially suited to the cure or relief of the disease, owing either to our ignorance regarding its real nature or cause, or to our limited knowledge concerning the action of drugs, they are not applied. As a general rule, I think it may be said that, the less dangerous a disease is, the less really is known as to its treatment. Take for instance that common ailment—quinsy. What are we able to do towards stopping its progress, or alleviating the pain attendant upon it? We apply turpentine, mustard, or linseed-meal externally, and administer remedies internally, but yet, usually speaking, no relief is gained till nature comes to our aid, and the disease terminates by resolution or suppuration. I recollect one medical man who had had me under his charge on several occasions for quinsy, and tried almost every remedy he could think of, at last saying, “Well, I don’t see what is the use of torturing you in this manner, for you seem to go on in exactly the same way no matter what is done; let us try how you get on for once by yourself.” The result was the same. Suppuration in the natural course of things took place, and I was then at comparative ease and well. But still I have no hesitation in saying, that had this medical man known and applied the remedies most suitable for this complaint, many days and nights of pain and restless anxiety might have been

spared. That drugs are able to influence the course of cynanche tonsillaris I am quite sure, for with the treatment I have adopted during the last two or three years I can predict with almost perfect certainty that my patient will be, comparatively speaking, restored to health on the third day. The usual duration is about one week.

I will first say a few words as regards the symptoms, and what I consider the causes of the disease, and then describe the treatment to be adopted for its relief.

The symptoms as described by the patient are—shivering followed by hot burning skin-pain and throbbing in the tonsil, stiffness of the lower jaw, constant flow of thick saliva, accumulation of tenacious mucus at the back of the throat, pain and difficulty in swallowing, especially at night, pain and difficulty in speaking, pain in the ear when suppuration has commenced, great irritability and languor, bowels confined, urine high-coloured.

On looking into the mouth the fauces are seen to be red and swollen, the uvula elongated and cedematous, adhering often to one tonsil, which is covered with a tenacious mucus. The sub-maxillary glands are felt to be enlarged (owing to sympathetic irritation). The patient makes a peculiar side movement of the head on swallowing, and has a peculiar thickness of speech, as if the mouth was full of something hot. The pulse is full and quick.

The predisposing causes of quinsy are—want of tone about the system generally, owing to excess of mental or bodily exertion or long-continued fasts, chronic dyspepsia, imbibition of alcohol before going into the cold night-air (congesting as it does the mucous membrane of the throat and stomach). The exciting cause is cold producing suppression of perspiration. The materies morbi here selects the tonsil, the same as it does, in gout, the great toe. I do not at all hold with it being the result of cold acting directly on the throat, for then laryngitis would be a much more common accompaniment than it now is; besides, in my own case, I noticed that the attacks came on most frequently when I took most care in wrapping up my throat; while exposure to night-air, and want of precautions, seldom seemed to produce an injurious effect. Moreover it

appeared, however careless I might be directly after one attack had passed off, though in a weakened condition, a second never followed.

The treatment I prescribe is the following :—Bicarbonate of potash, one scruple ; powdered guaiacum, ten grains, or tincture of guaiacum, half a drachm ; mucilage, as required ; water to the ounce. To be taken with fifteen grains of citric acid three times a day, in a state of effervescence. A gargle consisting of twenty minims of tincture of iodine to the ounce of water (to be used by being held in the mouth and the head shaken from side to side). Three or four glasses of port wine daily, and plenty of beef-tea. If the weather is fine, I order my patient to take a little gentle exercise in the open air. No other application is required for the throat than that mentioned. Purgatives I do not consider necessary, since as soon as the disease is over the bowels regain their proper tone, and become perfectly regular.

The advantage of the above line of treatment may be shown by relating the two following cases. While on a visit to a friend some two years ago, I was asked by a gentleman to see his brother, who was suffering from a bad attack of quinsy. I found him in bed with poultices and flannels round his throat, looking the very picture of wretchedness. He could neither speak nor swallow without great difficulty. I ordered him to get up at once, to throw off all wraps from his throat, and take gentle exercise in the open air. The medicine prescribed was the same as mentioned above. On the second day he was able to go off to his office, feeling comparatively well. A day or two after this a gentleman next door to where I was staying was taken with the same thing. He was kept to his bedroom ; had mustard and linseed-meal applied to his throat ; in fact, I may say, went through the usual line of treatment, and the result was that he was ill for more than a week.

Persons who have had quinsy before, which has usually run on to suppuration, are perfectly incredulous when I tell them they will be well in three days ; but results almost always prove the correctness of my statement.

Of course where suppuration has commenced (as shown by the pain in the ear), the treatment is utterly unavailing, and I

then stop all medicines, and simply administer wine and beef-tea.

I have tried almost every kind of treatment upon myself, both general and local, and I can say most positively that this will be found the best. I do not really think I am stating too much when I say that it is almost a specific. At any rate I shall be quite willing to leave it for my professional brethren to disprove or endorse the opinion held.

A PLEA FOR COMPULSORY VACCINATION REFORM IN SCOTLAND.

BY ROBERT TURNER, M.D.

AN impartial review of the subject of vaccination, such as has been given in the *Practitioner* for October and November last, will be highly acceptable to medical readers, and must prove, at the same time, a seasonable and useful appeal to the general public in its own interests. No more direct reply to the crotchety, yet somewhat mischievous Anti-Compulsory Vaccination League can be needed; for I believe this notable crusade may very safely be left to itself, its tendency to early death from collapse being manifest.

But while satisfied that the beneficent mission of Jenner and his successors has little to fear, in this our enlightened day, from active hostility, lay or professional, I am as firmly persuaded that the great enterprise suffers material impediment at the hands of many of its friends, either from the too implicit reliance of some on our present legalized system of vaccination, or because of inertness, in word and deed, on the part of others, to whom the defects of that system are known. The means of defence, therefore, from one dread scourge of our race, which, properly employed, would be complete, are by this over-confidence and indifference combined rendered uncertain and limited in this country. Vaccination *as it is* leaves us a prey to the not infrequent invasion of small-pox; vaccination *as it might be* would banish the disease for ever from the land.

In the course of a professional life extending to upwards of thirty-five years, I have been cognizant of the doings of *bane* and *antidote* throughout a wide and populous district of country,

and during most of this period, until the Compulsory Vaccination Act for Scotland became law, some five years ago, the protective measure has been here so imperfectly and perfunctorily applied, that the wonder might reasonably be, not that the expedient has failed in certain instances to confer immunity from small-pox, but that failure has not been much more common. However competent or zealous the almoner, obstacles of various kinds prevented the due bestowal of the gift. The practitioner was seldom afforded an opportunity of ascertaining for himself the result of an operation; for his employers, being under no legal compulsion, very rarely brought their children for after-inspection, but, self-constituted and sole judges in the matter, either took no further notice of it, or were content with advising the doctor, at their convenience, that "the pox" had or had not "taken," as in their judgment the case might be. The spurious and the genuine pock were thus, obviously, on an equal footing as regarded the chance of approval; and the difficulty, with the country practitioner, of keeping up his supply of efficient lymph under such circumstances can be readily understood. The difficulty rose to an impossibility when, as often occurred, half a year or more elapsed without his being ever called on to vaccinate. In many instances, too, the subjects for vaccination in a family were allowed to accumulate, and one *séance* was made to serve for half-a-dozen children, *plus* (not improbably) the offspring of half-a-dozen neighbours.

The greater number of recipients, besides, did not come under the notice of the regular practitioner at all, but were dealt with by the midwife, a canny friend, or the father, or mother, armed with clasp-knife or darning-needle. I remember one amateur vaccinator of great local repute, a "surgeon to old shoes," the weapon of whose anti-varioid warfare was his *awl*. The arsenal of this body of volunteers was in keeping with their armory. Matter belonging to any stage of vaccinia, or even the scrapings from the moistened under-surface of the effete crust, after it had dropped off from the arm, served the purpose; and when the produce of this rude husbandry was a pimple or sore of any description, it sufficed.

In not a few cases, protection from small-pox was never invoked in any way.

As for *revaccination*, I may say, shortly, that except by the more intelligent class of patients, it was seldom acceded to when proposed, and still more rarely applied for, unless when an occasional pressure from without, in the shape of a visitation of small-pox, arose and frightened some into availing themselves of the means of safety.

Examples of *insusceptibility*, I may mention by the way, have not been very much more common in my practice, nor in that of many of my brother-practitioners whom I have questioned on the point, after renewed than after first vaccinations,—a fact from which I think the plain inference is that the first-named procedure is an advisable one.

Such is a not overcharged description of vaccination (so called), as I have personal knowledge of its being practised in this quarter, before the existing law in relation to it came into operation; and if my description were applicable to this one district alone, or if the evil influence of the system described had ceased on the introduction of a better, such a record would be little profitable or interesting; the “dead past” might fitly be left to “bury its dead:” but I venture to affirm, as the result of much inquiry on the subject, that the method pursued in other parts, during the period in question, was in no essential respect more satisfactory, vaccine institutions, and other facilities in our towns for the due employment of the measure, notwithstanding; and I need not say that, in a community so circumstanced, a law providing only for the vaccination of children, left many individuals absolutely or probably without protection; nor is it necessary to point out that many living amongst us are in one or other of these conditions at the present hour.

The comportment of small-pox in the country, as I have observed it, has been on every occasion of its appearance precisely what might have been anticipated, considering the nature of its sphere of action. In the unvaccinated subjects of attack, the malady ran its course with all its wonted severity and fatality. In a certain number of cases, where there was reason to believe that cow-pox had once been efficiently imparted, although at a remote period, the disease, taken in a mitigated form, proceeded mildly and ended favourably, producing no pitting or other bad consequence; but on others so circumstanced,

the one early vaccination appeared to exert no modifying influence whatever—great disfigurement and other untoward effects following in several, and death in some instances.

On the other hand, I have never met with small-pox, even among the attendants on those affected with it, and others much exposed to its contagion, in any case in which vaccination (or revaccination) was of more recent date than *ten years* preceding the period of exposure; and, keeping in view the pre-eminent activity of the varioloid poison, I believe we shall not err in ascribing such escapes, as a rule, to the protective agency of cow-pox.

The conclusions to which the foregoing statements irresistibly lead, will be found in strict accordance with generally received opinions in the profession. It is a corollary from both that, as regards the fulfilment of its professed purpose, the present vaccination law for Scotland is defective, securing, as it does, adequate protection only to children under the age of six months for the ensuing eight or ten years of their lives, and ignoring the wants of the rest of the population—a portion of whom it leaves as obnoxious to the ravages of small-pox as were the inhabitants of Puynipet, when the disease visited them, for the first time, some fifteen years ago.¹ It is not to be denied that cow-pox *once* introduced into the system, will, in some instances, confer lasting exemption from small-pox; but it is just as certain that in other, probably in not fewer instances, the power of the preventive agent is of limited duration, the tenure of certain protection lasting only for the period above stated. And when this lease of presumable safety has expired in any given instance, who can predicate the result of exposure to the contagion of small-pox—whether the person exposed shall resist the disease or not, or whether, if attacked, it shall be mildly or the reverse?

¹ An Austrian frigate, circumnavigating the globe for scientific purposes, touched in the course of the voyage (in 1859) at the island of Puynipet, one of the Caroline group, in the Pacific. The island is about sixty miles in circumference, with a population of 2,000. In 1854 the population had amounted to 5,000, but in that year an English captain left on the island one of his crew suffering from small-pox. The natives stole the sick man's clothes and other effects, thereby catching a very decided Tartar, for *above three thousand* of the *five thousand* perished from the disease; a "modern instance" proving that Samson is still terrible as ever, where Jenner's Delilah has not ensnared him and shorn him of his strength.

Moreover, granting for the sake of argument what is contradicted by fact, that the proportion of the defenceless in society is as small as some allege, are not the chances equal that the man of signal usefulness, or the garrotter, may be the victim of this imperfect legislation?

Happily these considerations are not of the sort that

“ Probe the wound and fail to bring the plaster ;”

for, while exposing the evil, they point as clearly to its effectual remedy :—*a thorough general vaccination or revaccination of all unprotected members of the community, of whatever age ; and this made imperative by law.* I suggested and advocated, although in vain, in the *Scotsman* newspaper, the adoption of a measure of this kind, when our present Vaccination Act was in preparation by the then Lord Advocate. Various objections—futile objections, as I esteem them—were urged at the time in opposition to my views.

The proposed measure was pronounced unnecessary, inasmuch as a general vaccination of *infants* would be found sufficient to secure for the entire population the necessary protection from small-pox. This objection, I think, need not be dwelt on, as it has already been fully disposed of.

Such extended compulsion, it was further held, was inexpedient, as involving an undue interference with the liberty of the subject ; an argument which, if it had any just foundation, must tell equally against the existing enactment, which legalizes compulsion as well. Surely infantile subjects have their rights in common with those of maturer years. But the proposed constraint is as defensible as it is salutary ; and, with all respect for my fellow “ free-born Briton,” I maintain that when it is certain, as in the present case, that he will not give voluntary effect to an arrangement calculated to promote the general weal, he ought, in accordance with long-established principle, to be coerced into obedience. If his pigsty, his untrapped cesspool, his open or unflushed drain, so much as stink in the public nostrils, legal compulsion is brought, and properly, to bear on him for the abatement of the nuisance ; why, then, should State interference be withheld when called for to prevent him from keeping his body in readiness for the reception and the trans-

mission to those around him of a surpassingly loathsome and deadly disease? Our sanitary precautions, as devised, against the generation and spread of *typhoid fever* are as complete as they can well be made,—must those in force for arresting the progress of the more formidable invader, *small-pox*, be allowed to continue less so?

The proposal was also objected to on the ground that the difficulty and cost of carrying it out must be so great as to forbid its adoption; and I admit that if the requisite machinery for enforcing it, and for obtaining evidence of its having been duly complied with, had to be constructed and kept in action expressly for these ends, the objection would have much weight; but, by a fortunate chance, as I regard it, appropriate and inexpensive means of effecting both are, so to speak, ready to our hands. The census returns, as is well known, are collected every tenth year,—and to collect, at the same time, certificates of the vaccination, or revaccination, within the decade preceding, of every man, woman, and child throughout the kingdom, would entail but little additional trouble on the staff of officials employed for the former purpose, and little additional outlay of the public money.

In one or two other, although less important points, our vaccination law admits, I think, of reform. As things are, the maintenance of the supply of efficient lymph is rendered uncertain, partly by carelessness on the part of parents and guardians, and partly in consequence of a rather wide-spread notion among the many, that breaking the vesicle impairs the protective influence of cow-pox; and the vaccinator has to beg—not always successfully—as a favour, what should in justice be secured to him as a right. For the redress of this grievance nothing more is required than a provision in the Act that the vaccinated child shall, on the day week following the operation, be produced for inspection, and in order that the vaccinator may take, should he think fit, the necessary supply from the arm for the use of others. A constant supply of vaccine in its most active state, direct from the vaccinifer, could thus be almost certainly obtained, and the risk of failure for the employment of unsuitable lymph, as well as the trouble of storing, would be avoided.

One other suggestion I would offer. On theoretical grounds—for I believe we have no positive experience on the point—the energy of lymph produced by a second, or any later vaccination, is open to the suspicion of enfeeblement. This possible, indeed rather probable cause of failure, the law might, of course, remove by obliging all operators to use the lymph of *first* vaccinations only.

Neither the *practicability* of a thoroughly amended system of vaccination, nor its *sufficiency* to accomplish the complete eradication of small-pox from amongst us, need, however, be contended for as matter of opinion alone; for experience in other countries—in Denmark, France, and Prussia, for example—has fully established both.

A late proposal¹ to arrest the spread of this disease by *isolation*, and other extraneous means, has no doubt much to recommend it in our partially defenceless present condition; but a plan giving still surer promise of success,—one as easily worked, to say the least, and as little likely to disturb public feeling,—awaits our adoption. Without, therefore, disparaging the method of “*stamping out*,” in the absence of a better, I confess to a stronger preference for *keeping out*.

¹ Sir James Y. Simpson, in the *Medical Times and Gazette* for January 4 and 11, 1868.

Reviews.

A Treatise on Asiatic Cholera. By C. MACNAMARA, Surgeon to the Calcutta Ophthalmic Hospital. London: Churchill. Calcutta: Thacker, Spink, and Co. Bombay: Thacker, Vining, and Co. 1870.

It was with much interest that we opened this volume. Besides the importance of the subject, there was much, in the known ability of the author, and in the fact that he has enjoyed large opportunities of studying cholera in its Indian home, to raise our anticipations of the result of his researches. In many respects these anticipations have been fulfilled. There has been at all events no lack of industry in the collection of facts bearing on the natural history of the disease, nor of independent thinking as to its pathology. The work contains an extensive collection of facts resting on copious evidence which has never yet been laid completely before the public. The history of the several great epidemics of cholera is traced with great fulness. And as regards that vexed question, the pathology of the disease, the doctrines of the author are so important that it will be necessary for us to describe and to some extent discuss them. But in regard to treatment, where we had hoped that the unusual opportunities enjoyed by the author would have produced some discoveries of magnitude, we are obliged to be content with very moderate achievements. Not that what Mr. Macnamara says on this point is uninteresting; on the contrary he comes to one or two conclusions, especially in the destructive direction, which it was very necessary that we should know. After all, however, the impression left on the mind after closing this volume is not much brighter or more hopeful than before. The hygiene of the future may exterminate cholera in its Indian birthplace. But for actual cholera patients, as long as such are found, we cannot yet pride ourselves on being able to do very much.

There is one accidental feature of Mr. Macnamara's work which gives it an interest that is quite exciting to those who care about cholera controversies at all. Mr. Macnamara was a

pupil and house-physician under Dr. George Johnson at King's College Hospital during the cholera epidemic of 1854, and seems at that time to have adopted both the pathological and therapeutical doctrines of his teacher. His transference to India soon placed him in a position to test the treatment on a large scale; and the result of these experiments, and of his own researches and reflections, have been to make him reject the opinions of Johnson entirely. We are sorry that this should be so: it would have been highly convenient if Dr. Johnson's ingenious theory had proved to be sound, but it is impossible to ignore the significance and weight of the evidence given by Mr. Macnamara under such peculiar circumstances. But we are a little anticipating the proper course of our remarks.

In regard to Pathology Mr. Macnamara holds a very distinct set of opinions, which in one or two respects are peculiar. In the first place he is quite decided in the belief that the exhaustion of cholera patients, and the physiological essence of collapse, are due to the outpour of serum from the blood. This outpour proceeds from an intestinal surface which has become denuded of its epithelium; and this denudation not merely causes serum to flow out from the blood-vessels, but prevents the venous capillaries from absorbing fresh fluid to restore that which has been lost. Accordingly the author comes to the same practical conclusion, on this head, as that of Dr. Beale, viz. that the severity and danger of the choleraic attack are directly proportioned to the extent of intestinal surface which has become denuded. Tracing the process a step further backwards, he finds that the agent which produces the epithelial desquamation is the contact of cholera-stuff—*i.e.* decomposing fæces of a cholera patient—with the alkaline mucous membrane of the intestines, or with the similarly alkaline mucous membrane of the stomach in the states either of fasting or of gastric catarrh. But here he introduces an element of novelty. For whereas the general result of European experimentation has been to convey the idea that freshly passed cholera stools were not infective, Mr. Macnamara seems to say that practically they are so. His account of the process is this: Under the influence of the poison, the intestinal epithelium becomes invaded by a peculiar molecular disintegration, the new molecular matter constantly growing and increasing at the expense of the proper cell-tissues. The changed epithelium is thrown off in the "rice-water stools;" and if at this period it falls upon linen or any other substance where it can dry up, it may remain for years unchanged but still retaining its characteristic properties. These properties are, that on being subjected to the action of water and of moderate heat the molecular matter in the epithelial cells undergoes further changes, with the immediate result that

vibriones appear in the fluid in which they are suspended. The period of vibrionic life lasts a longer or a shorter time, doubtless, according to the temperature of the atmosphere; in Mr. Macnamara's Indian experience it is in full action within twenty-four hours of the stools being passed, and it lasts till the third day, when the vibriones are replaced by ciliated infusoria. About the eighth day, or sooner, the infusorial forms have disappeared, bubbles of gas rise to the surface of the liquid, and confervoid growths line the sides of the vessel which contains it. Now, Mr. Macnamara expresses the decided opinion, which is very important if true, that cholera-stuff is absolutely innocuous when once the stage of vibrionic life is over. He does not believe that vibrios or any other organisms are the *cause* of cholera, nor that their death *makes* the cholera-stuff innocuous; but simply that their death marks the finish of that period of molecular activity which is the essence of the contagion process. [It must be remarked here, that Mr. Macnamara evidently leans to Pouchet's side in the controversy concerning so-called spontaneous generation. He clearly seems to feel that there is no break, nor introduction of any new element, between the appearance of mere molecular matter in the intestinal epithelium, and the full development of unmistakeable organisms (vibrios) in the stools.] It is the process of molecular change which is contagious, and which has power to transfer itself from the epithelium of rice-water stools to the epithelium of the alimentary canal of those who swallow any portion of such stools. So far as we understand him, he believes that if a grain or two of cholera-stuff which has never yet exhibited vibriones be swallowed, and thus subjected to the moist heat of the alimentary canal, it will, unless neutralized by certain influences to be mentioned presently, develop the characteristic changes in the intestinal epithelium of the swallower, and regular phenomena of Asiatic cholera. Upon this part of the subject we cannot avoid remarking that the author makes statements of prodigious importance, for which he does not always produce evidence in such a detailed form as the gravity of the case demanded. For instance, in regard to the innocuity of cholera-stuff, which has completely passed through that state of change which is accompanied by the development of vibrionic forms, he vouches for the facts on the strength of his personal observation: and we naturally expected this remarkable statement to be followed up by the records of definite experiments. But nothing of the kind is given, and we must say that the omission is a serious defect, though we must suppose that Mr. Macnamara did not speak without strong evidence. On the other hand, we are bound to say that he has added not a little, by his diligent observation of facts, to the solidity of the basis on which rests the modern

theory that cholera-dejecta are the only true source of cholera-infection.

Upon the question of the cause of collapse, we think that Mr. Macnamara is successful in answering some theoretical objections which have been urged against the belief that this consisted in the loss of serum from the blood. He marshals in convenient order a series of recorded facts, which tend to show that the much-talked-of "rapid deaths from *cholera sicca*" are simply cases in which some three or four pounds of serum have been *rapidly* poured out into the intestines, and death has occurred from the shock, before any of this fluid could escape *per anum*; whereas in more ordinary cases, attended with purging, a much larger total quantity of serum may be lost, but so much more gradually that the element of nervous shock never (or much more slowly) assumes a fatal gravity. And we think that he makes an unanswerable objection to the basis on which Dr. Johnson's whole theory rests, when he points out that the latter has assumed, throughout his writings on the subject, that the primary cause of the phenomena of cholera is a poison acting within the blood (a theory which is necessary to account for the supposed spasm of the pulmonary arterioles), and that such an assumption is entirely unwarranted by any trustworthy evidence that we possess. But we are inclined to think that Mr. Macnamara leans too exclusively upon the agency of mere loss of serum, for the explanation of collapse; for surely the denudation of a large intestinal surface must inflict a direct shock of the severest kind upon the nervous system, independently of the effects of the serous effusion. Moreover, as we shall presently show, there is more evidence in favour of the possibility of beneficial treatment through remedies partly, at least, addressed to the nervous system, than can be adduced for any other kind of treatment.

Intermediate between questions of pathology and those of artificial treatment, is the consideration of those means by which the healthy organism contends against the poison, when it has been unfortunately received into the body. On this point Mr. Macnamara's observations, though not strictly original, are very important. He insists upon the absolute necessity, to the infective life of cholera-stuff, of an *alkaline* medium; and upon the inevitable arrest of the molecular cholera processes whenever the stuff is mixed with an *acid* fluid. What can be done outside the body by acidifying cholera-stuff with sulphuric acid or sulphate of iron, is often done inside the body by healthy *gastric juice*, which has the power of entirely and permanently arresting the activity of the molecular changes in the stuff, and thus rendering it harmless. In this way we can explain the vastly greater susceptibility of fasting men than of men with full

stomachs, to the evil effects of drinking water fouled with cholera-dejecta. And the deficiency of acid in the stomach-secretion of those who from alcoholic intemperance, or other causes, have become affected with gastric *catarrh*, may similarly account for the facility with which dissipation predisposes to attacks of cholera, when the disease prevails.

Upon the subject of treatment, as we have already remarked, the author has no very flattering tale to tell us, yet his remarks are full of interest. Of first-rate importance is his judgment on the "eliminative" treatment; for he was predisposed to think well of this plan, and he applied it on the large scale with enthusiasm, and with full understanding of Dr. Johnson's views. He declares that the mortality was frightful, and that he has completely abandoned the method. In fact he has been led by experience to resume the older and opposite practice of administering opium, at least in the early stage, before the occurrence of true rice-water stools. He gives half-drachm doses of the tincture after each liquid stool, and says that two or three such doses arrested the disease in a large number of cases, which he doubts not would have developed into ordinary cholera. [We may mention that Dr. John Murray's recent exhaustive collection of Indian medical opinions on the treatment of cholera, appears to bear out Mr. Macnamara's view on this point.] But he deprecates its use at later stages; and we are glad to see that he altogether rejects the routine use of calomel. He believes that that drug only does good as an *antiseptic*, by arresting the molecular action of the cholera-stuff upon the epithelium, and for this purpose he much prefers mineral acids. Of the great importance of these latter agents he is fully convinced; their theoretic value, as known arresters of the molecular movements which evidence the activity of cholera-stuff, seems to be borne out, to a large extent, by their actual effects as a remedy. Even in the collapse stage their partial employment is sometimes useful. They are never to be continued, under any circumstances, if they have once succeeded in rendering the stools acid in reaction. Another really practical matter is the employment of prolonged chloroform inhalation for the relief of *cramps*; it would seem that not merely is the patient saved an immense deal of suffering, but that an important economy of his strength is thus effected. Upon the use of alcoholic stimulants, Mr. Macnamara declares his opinion very distinctly; like opium, they are useful in the stage of diarrhœa *previous* to rice-water purging; in any later stage they are worse than useless. On the treatment of the reaction stage, the author makes no remark of consequence, except an indorsement of Dr. Francis's treatment of the suppression of urine, which occasionally happens, with ten-minim doses of tincture of cantharides frequently repeated.

Upon a general review of the therapeutic portion of this work, it is doubtless discouraging to see how little there is which indicates a positive and well-assured advance of our knowledge. Yet there are sundry items of information which, taken together with our improved knowledge of the pathology of the disease, afford ground for not unpromising speculation.

I. Pathological knowledge seems to have reached a point at which we are justified in believing that the extent of the intestinal lesion—the amount, *i.e.*, of denuded mucous surface—is (if not the sole *cause*) the accurate *measure* of the gravity of the attack. If that be the case, the principal objects of the physician should be—(1) to neutralize the destructive agent which is attacking the intestinal epithelium, and (2) to mitigate the depressing effects on the nervous system (*a*) from the rapid loss of serum of the blood, and (*b*) from the centripetal influence emanating from the denuded mucous surface.

II. Though not certain, it is now highly probable that the active matter of cholera-contagion depends for its morbid power on molecular movements which, in common with a number of other motions of vegetative life, can be stopped by the contact of certain chemical and medicinal agents. This leads to the suggestion that every case of diarrhoea, occurring during the existence of cholera in a district, should from the first be treated by the use of the best agents of this class with which we are acquainted.

III. As regards the particular agent which may best answer this purpose, we are doubtless only on the threshold of the inquiry. The researches of Binz in an analogous field have proved that a large number of agents, including alcohol, quinine, opium, calomel, &c., possess the power of checking the vital movements of simple organic bodies. But the question in any case of practical therapeutics must necessarily be a double one; for there is not merely the consideration of the relative value of different antiseptics *quod* antiseptics, but that of the possibility of bringing them into effective contact with the peccant matter without inflicting too much damage in other ways. It is a great thing, as a holdfast on solid fact, to know on the one hand that both opium and acids belong to the group of agents which arrest the movements of low organisms, and on the other hand that after all the controversies that have passed, an immensely greater weight of experience testifies to practical good done in cholera by these remedies than by any others.

IV. There is, however, a different aspect of the subject which must not be overlooked, and which may possibly prove to possess far more importance than as yet appears, *viz.* the degree to which the nervous system intervenes in the pathological process, and should be appealed to by the treatment.

That the nervous system is the seat of the primary injury, being poisoned by a specific cholera-virus introduced into the blood, is, we think, not merely unproved but unlikely, notwithstanding the opinions of some distinguished authorities. But it is not merely possible, but very probable, that the local mischief set up by the cholera-stuff in the epithelium of the intestines provokes reflex nervous action, which causes a great aggravation, at least, of the malady. There is much reason to suppose that paralysis of a certain portion of the nervous supply to the intestines is itself capable of producing a large serous outpour from the intestinal blood-vessels. The question therefore comes in, under the head of treatment, whether it may not be as essential to interrupt the irritant effect upon the nervous centres, as to arrest the peripheral mischief which sets it up. It may be that the great power which opium seems to possess in the early stages of cholera is due in equal proportions to its antiseptic action within the alimentary canal, and its soothing influence upon the nervous centres.

At any rate it appears to us that the path of useful experimentation is opened in several directions. In the first place, it will be desirable to make fresh experiments on a very large scale in search of a first-rate *disinfectant*, in the proper sense of that word: viz., an agent which perfectly and permanently arrests all molecular changes that would otherwise reach a stage at which new living organisms are observed. Next, it ought certainly to be ascertained, without delay, to what extent mere paralysis of intestinal nerves is capable of producing epithelial desquamation and serous outpour. Further, we must search for new and powerful means of stimulating the spinal nerve-centres, in such a way as to enable them to resist the evil impression conveyed to them from the diseased surface of the intestine; and we cannot help thinking that here there is a large field of hopeful work before us. In particular we would suggest that the penetrating qualities of the constant galvanic current ought certainly to be tried for this purpose: there is the more reason for this that it might be applied in stages of this disease in which absorption of medicines is no longer practicable. On the latter point, however, we have a final word to say. From such inquiries as we have been able to make we do not believe that either here or in India the hypodermic injection of remedies during collapse was fairly tried; and, on the other hand, we have received a certain amount of positive evidence in its favour. It should certainly be made the object of a special and extensive research by the Indian practitioners at the earliest opportunity which presents itself.

Notes on Asthma; its Nature, Forms, and Treatment. By JOHN C. THOROWGOOD, M.D. Lond., M.R.C.P., Assistant Physician to the City of London Hospital for Diseases of the Chest, &c. London: Churchill, 1870. Small 8vo. pp. 132.

THIS little book is a useful compendium of the author's considerable experience in the treatment of asthma; and although it makes no pretensions to the rank of a complete treatise on the disease, it will possess much interest for practitioners. The cases recorded range themselves in two divisions; those in which the disease is a pure spasmodic neurosis, and those in which neurotic asthma engrafts itself upon actual pulmonary disease, such as emphysema, chronic bronchitis, or a complication of these two.

A few words as to the author's pathological standpoint are necessary. He ranks himself with those who (like Dr. Salter) consider that tonic spasm of the *bronchial* muscles is the essence of the neurotic disease, sometimes ending in, or alternating with, a paralytic condition of the same fibres. He does not deny the possibility of its production by spasm of the *diaphragm*; and he allows that, in cases where the condition of the bronchial fibres is a paralytic one, the diaphragm is often in a similar condition. But on the whole his opinions directly contradict those of a large number of the best modern observers, who ascribe the principal share in the production of the paroxysm to a spasmodic or a paralysed condition of the voluntary muscles of respiration, especially of the diaphragm. We confess we are surprised at this. For our own part, the reading of Von Bamberger's able paper published in 1865 (*Würzburg med. Zeitsch.* vi. 1, 2) induced us to refer to a number of authors whom that writer cites in support of his own conclusions; and the result of this study, and of our own clinical observation since, was the conviction that for the vast majority of cases the hypothesis of an affection of the voluntary muscles of respiration afforded a much more rational explanation of the phenomena, than could be derived from the popular theory of a bronchial spasm. We think we may venture to say, also, that the most eminent recent authorities (with the notable exception of Dr. Salter) concur in thinking that the bronchial theory is not proven, and is unnecessary for the explanation of the facts; indeed, were this not the case, the eminent Paris professor of therapeutics could hardly have used the confident expressions on this point which will be found in the final passage of his interesting article on "Belladonna in Asthma" (*Practitioner*, July 1869).

Whatever criticisms, however, we may make on the details of Dr. Thorowgood's pathology, we concur entirely in the general conclusion to which he comes, that the whole group of neurotic

conditions capable of producing asthma—the spasmodic equally with the paralytic—are essentially conditions of debility; and to tonic agencies we must in all cases look for the basis of our treatment, sedatives being reserved for special emergencies. The specialty, indeed, of this unpretending volume is the confidence with which the author bears testimony to the efficacy of certain so-called nervine tonics; for although a general plan of tonic regimen has been frequently recommended as subsidiary to specific treatment, we doubt if any previous writer has advised the employment, as the main element of treatment, of such an remedy as strychnia and nux vomica, of which Dr. Thorowgood speaks in the highest terms. Arsenic, of which he also speaks very favourably, has indeed been a good deal employed; but those who have used it seem for the most part to have considered it necessary to account for its beneficial effects by calling it a “sedative.” The merit of Dr. Thorowgood consists in his frank recognition of the fact, that nervine stimulants may be as useful in the treatment of *spasmodic* as in that of *paralytic* conditions—the difference between spasm and paralysis being far more in superficial appearance than in essential nature.

For the rest, Dr. Thorowgood does not neglect the use of more ordinary remedies, though we think he somewhat undervalues certain of them. In particular, we are disappointed that, in his estimate of belladonna, he does not inquire into the value of minute doses of atropia subcutaneously injected. He mentions the experience of Hirtz, but he does not seem to have followed up the valuable suggestions of that author. For our own part we are convinced that the wholesale condemnation, not only of belladonna, but of opium, which is frequently found in the pages of eminent writers, is due almost entirely to the fixed idea that these and similar substances must narcotise, whereas in minute doses, and especially when given through the skin, they are sedative precisely because they are stimulant and *not* narcotic.

Administration of Chloroform and Nitrous Oxide. By CHARLES SQUAREY, M.B. Lond., M.R.C.P., Assistant Physician to the Hospital for Women, &c. London: James Walton, 1869.

THE author of this little work enjoyed large opportunities for the practical study of anæsthetics during three years, while he was resident medical officer to University College Hospital. He now presents to the profession a very convenient little pocket-handbook in which he has embodied certain practical hints which grew out of the facts that impressed themselves on his mind during his extensive experience. We do not quite agree with him on every point; but from personal experience we can testify to the general accuracy and great value of the little treatise which he has produced.

Livret Maternel pour prendre des Notes sur la Santé des Enfants (sexe féminin). Par le Professeur J. B. FONSSAGRIVES (Montpellier). Paris : Hachette; Masson, 1869.

IN this little pamphlet we see the first instalment of an undertaking which is ingenious and meritorious in a very high degree. Professor Fonssagrives is one of the most rising authorities on hygienic matters in France: and he carries an amount of intelligent enthusiasm into his work which ought to make him more than commonly useful to his generation. The idea in which his present undertaking originates is at once scientific and practical, and our only doubts are as to its feasibility until hygienic science shall have become more popularly appreciated than it is at present. He wishes to induce all mothers of families to commit a record of the health of their children, not to the treacherous keeping of their memories, but to the positive black and white of a tabulated document, with headings and necessary notes scientifically designed. The whole would then form a complete biological and pathological journal, of the utmost value as a book of reference when the medical man is called in on any particular occasion. We can only add that if Professor Foussagrives' plan does not meet with practical acceptance it will not be the fault of the plan itself. The tables here supplied are such as it needs no technical knowledge to enable any moderately educated person to fill up: and a very small amount of labour would suffice for the registration of every fact that need be registered. For our own part we strongly recommend those benevolent ladies who are endeavouring to improve the intellectual and moral culture of their sex to take up this scheme, which is a good deal more likely to be of permanent utility to woman-kind than the grandest projects for conferring on them the right to the suffrage, and the *entrée* of the pulpit, the bar, and the College of Physicians!

A Contribution to the Physiological Study of Veratrum Viride and Veratria. By R. AMORY, M.D., and S. G. WEBBER, M.D. Boston: David Clapp and Son, 1869.

THIS pamphlet is a reprint from the *Boston Medical and Surgical Journal*, and records some interesting researches by the authors, who are well known as experimenters on the physiological action of drugs. The essence of their teaching is as follows:—Veratria paralyses the spinal cord or the peripheries and termini of nerves, and, if carried far enough, extinguishes the vital functions, first of respiration, and then of circulation. They reject Prévost's opinion, that veratria acts directly upon the muscular tissues, through the blood-supply. They refer the salivation, vomiting, and increased intestinal excretion to the action of

the poison on the spinal cord, either direct or reflex. We must observe that we think their therapeutic conclusions are vitiated by an entirely unjustifiable assumption, viz. that the effect of large and of small doses of the same agent cannot be different in kind. We believe, on the contrary, that such differences not merely exist, but *are the rule* in the case of a great majority of all remedial agents whatever. At present, therefore, we can only accept Messrs. Amory and Webber's experiments as showing the toxicological relations of veratrum and veratria to the organism.

Letters on Vaccination. By WM. WOODWARD, M.D. Worcester, 1870.

DR. WOODWARD has done good service by reprinting these letters, which were originally published in a local newspaper, with the view of influencing public opinion on the Vaccination question. He gives a brief but telling sketch of the history of vaccination, and what it has done towards the diminution of small-pox, and the mortality therefrom. He dwells forcibly upon the necessity for an *efficient* vaccination, and also argues in a very sensible manner for the practice of re-vaccination. He shows indisputably, from statistical evidence, that vaccination is at least as protective against small-pox infection as small-pox itself, and he remarks that "to think it is useless being vaccinated because its good effects will not last an unlimited time, is, if I may be allowed the very common simile, the same in principle as the boy strongly objecting to clean boots on the ground that they would want it as badly as ever on the morrow." He gives the public a salutary reminder of the horrors (happily unknown at present in this country) which reign where the ravages of small-pox are not opposed by vaccination. And finally, he goes over much the same facts as those which have been lately summed up in the *Practitioner*, and which form a complete and decisive answer to the fallacious and terrorising statements which have been recently revived, as to the conveyance of infectious disorders by the medium of vaccine lymph.

If it be true, as we have understood, that the local authorities of Worcester, like those of a few other towns, have been really wavering in their minds as to the advisability of enforcing the Amended Vaccination Act, we earnestly recommend them to study Dr. Woodward's clever pamphlet, which is unanswerable, and appears most opportunely. And we will add that it deserves more than a local circulation at the present time, when noisy and ignorant agitators are doing their best to induce a widespread distrust of the benefits of Jenner's great and most **beneficent invention.**

Clinic of the Month.

On the Action of Ipecacuanha.—In a communication made to the *Lancet*, Mr. Fuller states he was led by the recommendation of a friend to test the value of small doses of ipecacuanha, and that, although commencing this mode of treatment with the greatest scepticism, he has been led by frequent successes to believe in its efficacy in the following classes of cases:—1. In the vomiting of pregnancy, in which, after having given extended trials to a variety of remedies, as hydrocyanic acid, nitrate of potash, oxalate of cerium, opium, nitromuriatic acid, bismuth, alkalies, and quinine, and though each of these remedies was frequently useful, he is convinced they are all far inferior to ipecacuanha. The effects of this drug he considers to be conspicuous in the most severe cases, and it is able to control not only that vomiting which occurs on rising in the morning, but also the more severe forms in which the nausea, retching, and vomiting are almost incessant. In support of his statement, Mr. Fuller gives the details of two cases in which persistent vomiting occurred, and which were successfully treated by the patient being ordered to take a drop of ipecacuanha wine in a teaspoonful of water every hour. In one case after twenty-four, and in the other after eight hours' pursuance of this plan, the vomiting ceased, and the drop of the wine was then only taken when nausea supervened, which it immediately removed. 2. A second class of cases in which the ipecacuanha plan of treatment proves eminently successful is in the sickness and diarrhoea of children, which it speedily — when employed in the same doses — quiets and ultimately stops. Its use is indicated when the motions are frequent and slimy, and also when they are of a grass green colour, and it is also highly efficacious in this form of dysentery when unaccompanied by vomiting; but the presence of sickness may be accepted as a special indication of its usefulness. Mr. Fuller observes that, contrary to the experience of some, he has at present obtained no success from ipecacuanha in the vomiting of drunkards. (See *Lancet*, Dec. 4, 1869.)

Treatment of Procidencia Uteri.—Dr. Gibson, in a paper read before the northern branch of the British Medical Associa-

tion, observes that, whilst the descent of the uterus is in the direction of the axis of the brim of the pelvis, the effects of the displacement are not usually severe; and in its progress in the direction of the axis of the pelvic outlet to a point beyond the vulval orifice, it is remarkable how frequently the procidentia is sustained without great injury to the health of the patient. Sometimes, however, even when slight, there is a considerable amount of suffering. So long as the course of the descending organ is in the line of the axis of the inlet of the pelvis, Dr. Gibson considers that no surgical operation at present recognised is required for its relief or cure; but when the descent is in the line of the axis of the outlet, and has reached or passed the vulva, the question of some surgical operation may reasonably be entertained. The slightest forms of the malady, like the most complete, are frequently associated with leucorrhœa and portal congestion. For the removal of the latter condition he recommends, after judicious regimen, the agency of podophyllin, duly protected; of chloride of ammonium, with or without hydrochloric acid, or the latter drug in some bitter infusion with mild aperients. For the former, the removal of the congestion on which it usually depends by sustained rest in the horizontal position, and astringent applications are indicated. The dress should be attended to, and all articles of clothing causing unequal compression of the thoracic and abdominal viscera prohibited. The abdomen at the same time, especially if pendulous, should be supported by a well-adjusted elastic bandage. Careful regiminal treatment and cold baths should be adopted, and sexual congress be rare. It sometimes becomes necessary to remove the hypertrophied condition of the uterus, whether this is the expression of *post partum* subinvolution or of chronic vascular engorgement, and for this purpose the ergot of rye is most efficacious, especially when supplemented by rest, frictions, cold injections, and sedatives. Beneficial effects may also be obtained from the iodide and bromide of potassium, iodide and chloride of iron, chloride of ammonium, and perhaps mercury. In the great majority of cases of procidentia uteri there is relaxation and descent of the *anterior* wall of the vagina above the highest point of its attachment to the urethra: hence the suggestion by Dr. Sims of removing portions of the mucous membrane, and approximating the edges of the wound. The posterior wall of the vagina may be removed in the same way as proposed by Dr. Hewitt, but Dr. Gibson thinks neither of these operations advisable, being uncalled for when the procidentia is slight, and inefficient when considerable. Other operative proceedings are alluded to by Dr. Gibson as having been attended with very satisfactory results in other hands, such as the formation of an artificial hymen, the removal of the edges

of the labium, the incision being begun about an inch below the superior commissure on either side, and uniting in an arched form half an inch behind the frenulum; but his personal experience is adverse to the general adoption of these operations. He thinks they are by no means free from danger, and that they are rarely if ever necessary. Dr. Gibson holds that, even in very bad cases, a well-adjusted pessary will sometimes retain the uterus within the vagina; and he favours the employment of a procidentia truss, consisting of a band of elastic metal encircling the pelvis, which is bent downwards anteriorly and terminates in two digital processes, which have an action upwards, backwards, and towards each other. By the use of this instrument the vagina is supported by the intermediate agency of the vagina, and not by direct pressure on the uterus itself. (See *British Med. Journ.* Nov. 20.)

Treatment of Vaginismus.—Dr. Tilt deprecates the division of the vaginal sphincter for the relief of this distressing infirmity, and thinks the best mode of cure is by forcible distension. To effect this forcible distension he places the patient under the influence of chloroform, and then gradually introduces the two thumbs into the vagina. Placing them back to back he separates them more or less, according to each particular case, and thus forcibly keeps the vagina distended for five or six minutes. He then introduces a large metal bougie, which is kept up by a T-bandage, and this may be worn with advantage for several days after the operation. Dr. Tilt considers that cases justifying a recourse to this mode of treatment are exceedingly rare, and that in most of the cases in which he has been consulted it has been a symptom of some form of uterine disease, or of vaginitis in very nervous women, and in these he has solved the vaginal spasm by curing the disease by which it was caused. Hence no kind of vaginal distension should be resorted to by the surgeon until he has convinced himself that there is no disease of the reproductive organs to account for the vaginismus. (See *Lancet*, Dec. 18.)

Treatment of Hysterical Aphonia.—Dr. J. Tanner observes that he has found this functional condition as little amenable to treatment as any in the whole field of medicine; but he has recently been so satisfied with the good effects of electro-magnetism applied to the *tongue only*, when used in conjunction with other remedial agents, that he is desirous of publishing the results he has obtained. He details a series of cases, and, summing up his results, states that it is all-important, before the electro-magnetism is applied, to convince the patient that she will be cured, since, if the powers of persuasion of the medical attendant fail, it is probable the effect will not be satisfactory.

Having placed the patient in an arm-chair, her head is firmly supported by an assistant, one handle of the instrument is placed in her hand, and when the mouth is opened and the machine in rapid action, the other handle is placed upon the tongue and pressed there; but the moment it touches probably the patient will scream violently, and she thus convinces herself and others who are present that her voice has returned. Care, of course, should be taken to ascertain by laryngoscopic examination that the aphonia is not caused by polypi, disease of the arytenoid cartilages, or other organic disease, and uterine symptoms if present should be treated.

Ether Spray in cases of Hernia.—Mr. Marsh, of Littlemore, gives the following instance of the value of this method of treatment. A man, about fifty years of age, and insane, complained that his rupture was down. On former occasions it had been returned, though with difficulty, by the ordinary means. This time, being more refractory than usual, it became necessary to do something more. At Mr. Sankey's suggestion the ether spray was applied, with complete success. Under its influence the swelling steadily lessened, and the gut was returned by the fingers with the greatest ease. The man complained very much of the burning of the spray. This, Mr. Marsh thinks, might be counteracted, and the return of the protrusion aided by the simultaneous induction of partial or complete general anæsthesia. (See *Lancet*, Dec. 11.)

Treatment of Corns and Bunions.—Mr. Clarke, of Lynton, recommends for these painful and troublesome affections that the corns should be well soaked in warm water, then closely pared, and a compound galbanum plaster, spread on very thin leather, as an old kid glove, applied over the corn. This gives immediate relief, and may then be discontinued for a week or a month. The galbanum plaster of the London Pharmacopœia should be used in preference to that of the British, which Mr. Clarke has found to give pain. (*Ibid.*)

Use of Drainage Tube in Empyema.—Dr. Paley, of Peterborough, gives the details of two cases of empyema, in which the employment of the drainage tube appears to have been materially conducive to the recovery of the patient from this disease. The first was a case of double pneumonia complicated with pleurisy on the right side, supervening upon measles, in a child aged ten. After the attack had lasted a month, about four pints of thick pus were removed in the ordinary mode with a trocar. In ten days the chest was full again. A second was made on a level with the ensiform cartilage, and a little to the right of the nipple on the right side of the chest. After a pint of pus had been

discharged, a small india-rubber tube (such as is used for feeding-bottles), about two feet and a half long, and with a few small openings cut into it with seissors at the end, to be left in the chest, was introduced through the canula, which was then withdrawn. The tube was securely fastened to two pieces of plaster above and below the wound, the patient lying on the affected side. The lower end of the tube was placed in a basin half full of water, on a chair by the bedside, and kept under water by a weight. The tube was kept in for six days, and adequately fulfilled its purpose. After its withdrawal the wound was covered with a piece of wet lint, with oiled silk over it; small quantities of pus continued to be discharged by it for four months, and afterwards from time to time. Complete restoration to health followed. The second case was of similar nature, and was equally successful. (See *British Medical Journal*, Jan. 1, 1870.)

Empyema treated by Tapping and Blistering.—The following case may be advantageously compared with the preceding. The case was under the care of Dr. Andrew Clark, and the symptoms of effusion into the right side of the chest supervened on scarlet fever. The usual physical signs were present; the urine was smoky, and contained much albumen; specific gravity, 1015. The pulse was 160, and the respirations 36 in the minute; temperature about 102° F. The patient was first treated by the tincture of the perchloride of iron, spirit of nitric ether, digitalis, and bitartrate of potash, and for a time was put on a daily allowance of three ounces of gin. Slight improvement followed this treatment, but it was not permanent. On the tenth day the right side of the chest was tapped and forty ounces of purulent fluid withdrawn. Much benefit was obtained from this proceeding, but about two weeks after the old symptoms returned, with all the physical signs of fresh accumulation of fluid in the right pleura. A blister three inches square was applied over the seat of dulness. Under the repetition of this local treatment, and the administration of digitalis, bicarbonate of potash, iodine, and steel, and subsequently of cod-liver oil, the patient gradually improved, and was discharged quite recovered about six months after the original attack. (See *Lancet*, Jan. 1.)

Venesection in certain Affections of Heart and Lungs.—Dr. Sutton details a series of cases showing the advisability of venesection to relieve distension of the heart and passive congestion of the lungs; and in commenting upon them observes that they tend to teach that we may expect benefit from venesection where there is disease of the left side of the heart, great engorgement of the lungs, and distension of the right side of the heart; in cases where mitral or aortic valve disease is

causing distension and dilatation of the right ventricle, especially if the aortic disease is accompanied by acute bronchitis, or in lung disease, which is accompanied by great lividity of the face and distension of the veins of the neck, showing that the right side of the heart is distended. It would appear that in cases of mitral disease, where there is evidence of great engorgement of the lungs and of the venous system, bleeding ought to be more frequently resorted to; for although venesection may not benefit the patient for any great length of time, yet it will greatly relieve the distressing dyspnoea. It is well known that patients with mitral disease, sooner or later, frequently suffer from cedema of the lower extremities, from ascites, the veins of the neck become distended, the lips become livid, the face bloated and full-looking, and the complexion more or less yellow; the pulse is very small and feeble, and there is very great difficulty of breathing. These patients may have been benefited by iron, by digitalis, or by mercury; but there comes a time when such remedies fail to relieve these distressing symptoms, and the breathing daily becomes more and more difficult, the pulse smaller and smaller. When the dyspnoea is urgent, ten or twelve ounces of blood may be taken from the arm, with the view of relieving the over-distended right side of the heart, the engorged lungs, and the over-distended left auricle; and although the undue distension of these cavities may be only temporarily relieved, yet this relief may allow the muscular wall of the right ventricle, and probably of the left auricle, to recover some of their power, may enable them to propel the blood forward with greater force, and in this way make greater efforts to overcome and obstruct circulation in the lungs. Venesection is not here urged with a view to relieve congestion in the sense of inflammation, but simply to remove blood which is cumbering an overworked organ, the right ventricle, of part of its work. The patient is no worse for the want of blood which cannot be passed through the lungs, and it proves that the circulation becomes more vigorous from the loss of a certain quantity of blood. Of course such a remedy can only be temporary; no kind of treatment can be expected to cure organic lesions from which dilatation results, and it follows almost inevitably that the same conditions will surely return. (See *Med. Times and Gazette*, Dec. 18, 1869.)

Uses of Carbolic Acid Oil.—Dr. Gibb, of the Monkland Iron Works, states that, following the recommendation of Dr. Jones Gee and others to sponge the patient with tepid water, and subsequently to grease the skin with mutton suet, in scarlatina, he has found the addition of carbolic acid, in the proportion of one to twenty of the suet, afford very considerable relief. In otorrhoea

he has found great advantage accrue from sponging the ear with tepid water, and carbolic acid one to forty, and subsequently dropping into the meatus a little of the following mixture:—Glycerine one ounce and a half, carbolic acid one drachm, sedative liquor of opium (Battley's) twelve minims. The fetid discharge is thus arrested. In throat complications he has obtained marked benefit from the use of Dr. Neilson's "inhaler," to the sponge of which is added a few drops of carbolic acid and Condyl's fluid in equal proportions, requiring the patient to inhale the impregnated steam several times daily. As to the treatment of burns and scalds by means of carbolic acid, Dr. Gibb cannot speak too highly. In the Monkland Company's Works upwards of 1,600 workmen are employed, and burns are of frequent occurrence. He finds the addition of carbolic acid, in the proportion of one part to twenty of the ordinary carron oil, the best treatment, and adds one grain of acetate of lead to the ounce of lime water before mixing it with the olive oil. The plan he adopts is to saturate most thoroughly several sheets of ordinary surgeon's lint with the above mixture, and entirely envelope the parts; over this he applies a thick layer of cotton-wool, which is removed every second day, to enable a further coating of the mixture to be applied to the lint, which he does not disturb, by means of a feather or fine brush. In one case the whole trunk was skinless; after the lapse of several days all the dressings were removed, and it was found that a new skin had formed. During all this time not a drop of pus could be detected, nor was any other unhealthy action present. (See *Lancet*, Dec. 11, 1869.)

Colotomy for the relief of Cancer of Rectum.—Mr. Curling gives some interesting particulars of a case of cancerous stricture of the rectum, in which the operation of colotomy was successfully undertaken, and the patient's life was prolonged for seventeen months. The patient had been under the care of Mr. Thompson, of Westerham, and appears to have had symptoms of his disease for three or four years. When seen by Mr. Curling, complete obstruction had existed for twelve days. The tongue was loaded, and he had lost his appetite; the pulse was good; the belly distended, but without pain. The indurated mass was of large size. Chloroform was administered, the colon found without difficulty, and not an ounce of blood was lost in the operation. Liquid feculent matter passed freely from the opening in the colon in the course of the day. A year after Mr. Thompson wrote, saying no trouble had been experienced in procuring evacuation of the bowel, and there was little or no unpleasantness attending the act. He was in the habit of wearing a pad, a piece of sponge covered

with oiled silk, immediately over the false anus, covered again with a small piece of spongio-piline slightly wetted with carbolic acid lotion, the whole being kept in place with a stout belt. Tenesmus and discharges of blood-stained mucus from the rectum were readily controlled by the employment of suppositories of opium. Death was preceded by the discharge of a considerable quantity of blood by the anus. (See *Lancet*, Jan. 1, 1870.)

Successful Treatment of Chorea by Hydrate of Chloral.—

Dr. Russell records a case of severe chorea occurring in an apparently healthy woman during the early months of pregnancy, in which chloral was used with remarkable results. The patient was quite unable to stand. The convulsive movements commenced in the left arm, and subsequently became general, ultimately affecting the eyes, the muscles of articulation and of mastication, though she retained the power of swallowing. Her sleep was much disturbed. She had never suffered from rheumatism. The first treatment adopted consisted in the administration of bromide of potassium, which proved an entire failure. The hydrate of chloral was then given, the patient taking seven doses in twenty-four hours, the first two of ten grains, the succeeding ones of fifteen. The first two doses procured some sleep; but after the third, the sleep became more continuous, lasting successively for three, five, and three and a half hours. Whilst she was awake, the movements, though occasionally violent, were much lessened, and she spoke distinctly. She was also able to protrude her tongue. She took liquid food. The patient now suffered a relapse, accompanied by pains in the uterus. Nutritive enemata were ordered, containing six grains of quinine and cod-liver oil, and two doses of laudanum were injected, the chloral being suspended. The uterine pain was removed, but the patient remained in a very excitable state. The use of the chloral was now recommenced, and with the best effects; she obtained long and refreshing sleep, and was able to take solid food. The remedy was employed for about ten days, and was then replaced by the tincture of hemp. After a few days the patient was discharged with only some slight symptoms remaining. (See *Med. Times and Gazette*, Jan. 8, 1870.)

Extracts from British and Foreign Journals.

On the Treatment of Varicocele.—Mr. Morgan observes that the vertical direction of the current of blood, especially on the left side, is the great difficulty to be contended with in this affection, and that the mere support of a contracted scrotum, effected either by the use of a flexible ring or by the removal of a portion of the scrotum, has not been found so successful as might have been anticipated, since the current is not materially influenced by these means, whilst the pressure of a truss, though retarding the blood-current, does not give any immediate support to the testis itself, and its use is frequently found to be extremely irksome and painful. The plan of suspension Mr. Morgan proposes, in the first place supports equally the testis and the distended veins, acting as an elastic stocking does to the leg; and in the second place allows an easy suspension of the organ. It brings the veins into an inverted position, and directly relieves them from over-distension, and the blood-current is more materially and effectually regulated, by doubling the vessels, as it were, round the abdominal ring. The apparatus suggested consists of a “suspender” composed of web, in which the testis is enclosed, having a piece of thick lead wire stitched into its free border. The sides are furnished with hooks, a lace, and a tongue of chamois leather, two tapes being sewn along the entire length of the web, which are afterwards attached to a suspending belt that passes round the waist. The apparatus is applied by the patient in the morning before rising and when the parts are relaxed, the organ being laid while in the dependent position in the “suspender,” and the hooks laced up with a moderate degree of tightness, then raising it up and attaching the tapes to the suspending belt previously to rising from bed. During the first few days it should not be constantly worn, and the parts should be sponged night and morning with cold water. Mr. Morgan has found great relief from this apparatus in cases of specific orchitis, the testis being first wrapped round with lint steeped in tinct. opii. (*Dublin Quart. Journ.*, Nov.)

On the Cure of Phymosis by sudden Dilatation.—Dr. Cruise advocates the treatment of phymosis by this method, which he finds efficient, safe, and ready. He considers the success of the method depends upon the circumstance that the

contraction is usually situated in the mucous membrane of the prepuce, just at its junction with the skin. Consequently, when this contracted point is forcibly opened, the mucous membrane tears up, while the skin expands with the utmost facility. The operation may be performed with the ordinary dressing forceps, but Dr. Cruise prefers an instrument he has had constructed at his own suggestion. These are blunt pointed and bent at right angles to the handles. The blades open when the handles are closed. Attached to the latter is a little arc cut with a screw thread, and carrying a moveable nut, which can be adjusted to regulate the extent of dilatation according to the requirements of the case. In order to calculate the amount of dilatation required, a loop of thread should be cast loosely round the penis at its thickest point, namely, at the corona glandis; the loop is then taken as a measure. Dr. Cruise proceeds to operate as follows: he commences by seeking out the preputial orifice, exactly where the skin and mucous membrane unite; into this the closed jaws of the forceps, taking care not to pass it into the urethra, are inserted; the handles are then suddenly and firmly closed. The mucous membrane tears up in the line of the axis of the penis, and immediately the foreskin may be retracted completely. The pain is sharp but transient, and is not followed by bleeding or other trouble. The only dressing needed is a strip of lint moistened with water or other lotion, which should be wrapped round the part so as to retain the foreskin retracted and cover the wound. Dr. Cruise remarks that this plan of treatment is best adapted for simple uncomplicated cases; that it is requisite to dilate fully, and that the subsequent retraction of the foreskin should be maintained for at least from twenty-four to forty-eight hours. (*Dublin Quart. Journ.*, Nov. 1869.)

Employment of the Acid Nitrate of Mercury in the Treatment of Secondaries.—Dr. C. E. Lyster states that he has been for some years in the habit of freely using this remedy, in a greatly diluted form, as a local application to secondary and tertiary syphilitic affections, with considerable success. He finds it pre-eminently useful in secondary ulcerations of the throat, in which class of cases he has succeeded in obtaining a cure, without the employment of any specific constitutional means whatever. He has also found it very valuable in tertiary ulcerations of the tongue, and lastly in syphilitic sores in any part of the body, more especially when the result of rupial affections. In cases of throat affection he commences the treatment by freely mopping out the parts with the solution properly diluted, and until lately he has directed the constant use of a gargle in the proportions mentioned below; but since the intro-

duction into practice of "pulverised fluids," he has chiefly applied the remedy in that form, as being not only more effectual but less irksome to the patient. Care is necessary in graduating the strength of the solutions used: when intended for application to the throat or tongue, either as a gargle, wash, or in the form of spray, Dr. Lyster invariably commences with one minim to the ounce, very gradually increased to two or even three minims. Employed in these proportions patients rarely complain of any annoyance. In one or two instances, however, it was found desirable to reduce somewhat the strength of the solution, and even to discontinue its use for a day or two. When the throat is mopped out by the practitioner, a much stronger preparation may be used, containing one or even two drachms to the ounce; and if the ulceration is deep, or of phagedænic tendency, a still more powerful application—half an ounce of the nitrate to one ounce of water—may be used, but this is rarely necessary. When applied to syphilitic sores on other parts of the body, he has found a lotion composed of half a drachm to one ounce the most generally useful. Dr. Lyster, however, now rarely employs the acid nitrate of mercury as a caustic, the strong nitric acid being both more efficient and less painful. (*Liverpool Medical and Surgical Reports*, 1869.)

Iodine as a Remedy for Vomiting.—Dr. Caspary remarks that Rademacher was the first to apply iodine for the above purpose; he gave a dessert-spoonful hourly, of a mixture of thirty drops of the tincture with half an ounce of water, and a little tragacanth. Dr. Bierbaum recommended iodine in the obstinate vomiting of typhilitis stercoralis. Caspary says that iodine not only checks vomiting, but also quiets pain, and is a good palliative in indurative disease of the stomach. If the vomited matters are very acid, carbonate of ammonia, as recommended by Rademacher, should be given first, in small doses, for a time; or in cases of heartburn and eructation probably depending on intemperance, carbonate of magnesia should be exhibited. (*Der Praktische Arzt*, Oct. 1869.)

Soluble Saccharated Oxide of Iron as an Antidote to Arsenic.—Dr. Köhler, of Halle, remarks that the long known antidote, *hydrated oxide* of iron, has many practical inconveniences. The preparation now recommended only differs from the latter in containing a larger proportion of water (as hydrate). Köhler used it with remarkable success in the case of a young man who had swallowed thirty or forty grains, or more, of arsenic. He comes to the following general conclusions about this new therapeutic agent:—(1) That it precipitates arsenious acid from solution in the form of insoluble arseniate; (2) That on chemical grounds it should be justly substituted for the ordinary

hydrated oxide as an antidote; (3) That experiments on animals fully bear out its practical efficacy; (4) That while in other forms of metallic poisoning (especially with common sublimate) mechanical antidotes like albumen, &c., are useful, the latter treatment is only a hindrance to the efficient application of the oxide of iron in arsenical poisoning; (5) That the iron treatment should *not* be accompanied by the use of neutral purgative salts, otherwise the antidotal combinations may be interfered with; (6) Since Schroff has proved that the arseniate of iron itself is always absorbed in minute quantities, emetics should be administered as soon as the antidotal combination of the iron with the arsenic may be supposed to have taken place; (7) As to the quantity of saccharated oxide of iron required to neutralize a given quantity of arsenic, it appears that about ten or twelve parts of the oxide should be administered for every one part of arsenic believed to have been swallowed. (*Berlin Klin. Wochensch.* 1869, 35, 36.)

On Cauterization of the Neck of the Uterus.—Some months ago an account was given in the *Lyon Médicale* of the practice adopted by M. Mauny de Mortagne for the cure of the vomiting of pregnancy, when this exceeded certain limits and became a serious symptom. M. de Mortagne cauterized the cervix uteri, both with the nitrate of silver and with the actual cautery. Still more recently, a paper appears in one of the medical journals of Toulouse, by Dr. Villard, who, holding the views of Bennett, on the frequency of abortion caused by ulcerations of the neck of the uterus, recommends that the treatment should be pursued even during pregnancy. By the appropriate treatment of ulcerations, granulations, or fungous growths of the cervix occurring on the neck of the uterus during pregnancy, we remove a determining cause of abortion, and a cause too which increases and develops proportionately to the advance of pregnancy. To cauterize these organic growths, and especially to cauterize them with the actual cautery, is in point of fact to replace a disease which tends slowly to progress, for one which rapidly disappears. In support of these theoretical considerations, the author reports three cases in which cauterization produced a cure of the affections for which it was employed, and in no way interfered with the progress of gestation. These women had previously suffered from one or several abortions. If to these observations we add those published by Robert, Boys-de-Loury, Courty, and others, we have sufficient evidence of the utility of this procedure. (*Recue Médicale de Toulouse*, Nov. 1869.)

Notes and Queries.¹

A NEW LIQUOR ERGOTÆ.—Mr. Edward Long, of Dublin, has devised a new preparation of ergot which appears to have some advantages over any previously existing form of the drug. He started from the principle that water is the best extractor of the virtues of ergot yet found, and conjectured that *glycerine* would probably take up the same soluble ingredient. He digested ergot, freshly powdered, in glycerine for ten days, frequently shaking it; on then straining, the liquid was found of a deep purplish colour, nearly as thick as treacle; the marc was quite soft and pulpy. This marc was digested in spirit for ten days more, pressed off and filtered, and the resulting tincture distilled off till it became syrupy, and then added to the previous solution.

The "fluid extract" thus formed equals in volume the quantity of glycerine originally employed, and each drachm represents half a drachm of powdered ergot, and may be considered a dose, for midwifery purposes. It is obvious that if the inventor's expectations of its efficiency be realized, there will be great conveniences in the employment of this new preparation. The practitioner will be able to carry with him to every midwifery case a little bottle holding a few drachms (and marked off into drachm doses), which will be ready for immediate use, whereas at present there is no way of getting certain effects except by the rough and disagreeable process of making an infusion of ergot on the spot. Moreover the latter preparation is extremely nasty; but Mr. Long's extract is sweet. He supposes that it will keep perfectly well. The profession are invited to make trials of this new preparation; and we shall be very happy to record any experience which any of our readers may have met with in its employment.

SIMILIA SIMILIBUS.—We have received from Dr. Marston, of Devizes, a letter on this subject, which we somewhat incautiously

¹ The Editor, being desirous of making this department a useful medium of communication between practitioners, will be glad to receive short notes on theoretical or practical points in therapeutics,—brief jottings on those numerous queries which suggest themselves from time to time to a medical man as he "goes his rounds," but which he has neither the time nor, in some cases, the opportunity of answering. The Editor does not pledge himself to reply to every question addressed to him, but he hopes to make the "department" the means of supplying the information required; and this he can only effect by the hearty assistance of his readers.

promised to insert and answer. We redeem our promise, though the letter is terribly lengthy, but must add that we cannot continue the idle business of slaying the already slain. If the note which we append to Dr. Marston's letter fails to convince him of the anachronism of such doctrines as *similia similibus*, we can only say—let him be unconvinced still. The letter is as follows:—

December 16th, 1869.

SIR,—Having been in the habit during more than ten years of using ipecacuanha in certain kinds of vomiting, permit me to add my testimony to its value.

Drs. Ringer, Phillips, and Hughes have so fully defined what in my own experience, I have found to be the true range in which this medicine acts, that I need not do more than add, that in that kind of vomiting occurring in what is called *sick headache*, and where the sickness is the most prominent symptom, it is invaluable, and that not only in the sickness of pregnancy, but in the vomiting arising from other sources of uterine irritation, I have found it very effectual. I have at present under care a case of fibroid tumour of the uterus, in which the symptom frequently occurs, and in which it is invariably arrested by the ipecacuanha. Will the Editor of the *Practitioner* oblige me and some others of his readers with a fuller explanation of his views on two important assertions made in the October, November, and December numbers of his much-valued periodical?

1st. He observes that there is no such things in existence as a *similarity* or a *difference* between drugs and diseases. Do not drugs produce, physiologically, certain abnormal conditions, and is there in no case any resemblance between the conditions; which drugs are capable of producing and those which are caused by disease? To the case in point—is there no similarity between the effects produced by full doses of ipecacuanha and that effect of disease which it is affirmed to relieve? Is there no similarity between the effects produced by even ordinary doses of colocynth and some kinds of diarrhœa? And may not such questions be extended almost *ad libitum*? May I ask further on this question, whether the learned Editor of the *Practitioner* has any principle to propose on which he would advise that medicines should be selected?

It seems to have been generally admitted that two things are necessary to make a *scientific* practitioner. 1st. Correct pathological knowledge; and 2dly, a knowledge of the physiological action of drugs: but if no principle exist on which such knowledge when possessed can be applied, of what avail is the knowledge itself?

While strongly opposed to all sectarianism in medicine, I must

confess my own belief that the doctrine of similars is sufficiently true and capable of a sufficiently wide application in medical practice to render it a very available and valuable, though not an exclusive guide in the selection of remedies; but if any principle capable of a more extensive application, or more effectual in practice, can be established, I will willingly accept it; the work of a physician is not to maintain a dogma, but to heal the sick.

2dly. The Editor expresses his thorough disbelief in *specific* remedies.

Again I ask, in no litigious spirit, for an explanation of the sense in which he uses the word "specific." If he mean to object to the idea that remedies exist which will infallibly cure disease, bearing certain names, I at once join him in his objection; but if by the term "specific" is meant such a definite relationship between a diseased condition to be treated, and a drug administered in the treatment of that disease, so that the former being ascertained the latter shall be indicated as the most appropriate remedy, it appears that, whatever principle we may adopt, the discovery of such relationship is the sole aim of medicine considered as a science. I venture to believe that it is in this latter sense Dr. Hughes uses this term, and if this use of the term be objected to, I see not how we can prescribe at all on any *scientific* principle; for how can a physician prescribe for a disease unless he believes that the medicine which he prescribes has some such relationship with the condition for which he prescribes it? He may be an allopath, a homœopath, or one simply guided by the experience obtained *ab usu in morbis*, but unless in this sense he believes in the specific (or particular) action of the remedies which he prescribes, upon the (particular) condition of the patient for which he prescribes them, why does he prescribe them?

As I read in each number of the *Practitioner* the very practical papers with which it abounds, what can it profit me if the remedies specifically recommended have no sort of definite connexion with the conditions of disease for which they are recommended? I take it that the Editor simply means to condemn the use of the term in the more popular sense of that term; if so, he has only to turn to the literature of the homœopathic school to find how completely that school is at one with him. It is not within the limits at first proposed by me, but, pen in hand, I can scarcely forbear an allusion to the statement that both allopathy and homœopathy are founded upon ignorance of the different effects produced by large and small doses of the same drug. Has the Editor ever read Dr. Reith's papers on this subject in the *Edinburgh Medical Review*, and has he ever become acquainted with the result of the

investigations, viz. a rediscovery, as it were, of the doctrine of similars?

The time has surely come when sectarianism in medicine should come to an end.

A belief in the doctrine of similars, or a belief in the doctrine of differences, or a belief in no doctrine at all, ought not to separate, the one from the other, honest and diligent searchers after truth. Mutual intercourse and friendship would serve to moderate the extreme views of parties, and each would learn that the whole truth rested not with himself.

I am, Sir, yours obediently,

C. H. MARSTON, M.D.

Upon this letter we observe as follows: 1. We repeat that any imagined "resemblance," or "opposition," between diseases and the action of drugs must be delusive, because it will always be based on an arbitrary selection of one or more symptoms as typical of the disease. Thus, *e.g.*, ague has to be looked on as a periodical shivering and flushing disease, and cinchona is supposed to be a "similar" to it because a few persons have shivered when poisoned with bark or quinine. 2. The reason of our disbelief in "specific" remedies is this: that diseases themselves are not specific *i.e.*, that apart even from the fact that such a disease as pneumonia may depend upon half a dozen different constitutional states, or diseases of other viscera, the individual constitution of each patient is so important a factor in the business as to upset all therapeutic calculations based on abstract theory. 3. The principle of therapeutic investigation which we uphold is clear enough. Let us confine our *scientific experiments* to the case of those diseases whose pathology is most intimately known; and then let us select our experimental agent *not* because poisonous doses of it can cause such and such symptoms in the healthy subject—a fact which taken alone is utterly irrelevant—but because our knowledge of its chemical and physical properties leads us to suppose that it will supply some element, either of material or force, which is obviously deficient. And in the case of the emergencies of practice, where we must act, sometimes, without any scientific knowledge of the *essential nature* of the effect we ought to produce, let us be frankly empirical, and not confuse ourselves with theories whether homœopathic or allopathic.—
ED. PRACTITIONER.

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¹ Any of the foreign works may be procured by application to Williams & Norgate, of Henrietta Street, Covent Garden, W.C. ; or Messrs. Dulau, of Soho Square, W.C.

THE PRACTITIONER.

MARCH, 1870.

Original Communications.

THE TREATMENT OF THE TINEÆ, OR RINGWORMS.

BY TILBURY FOX, M.D. LOND.

Fellow of University College, Physician to the Skin Department of University College Hospital.

THERE are few who will refuse, on reflection, and especially after an appeal on the question to most text-books on skin diseases, or even the actual practice of the several dermatological departments at the different London hospitals, to admit that the treatment of the various forms of tinea, or ringworms as they are generally called, may be fairly termed purposeless. The mere enumeration of parasiticides on the part of writers on cutaneous medicine, or the trusting to some favourite panacea for ringworm, takes the place of the definition of, or guidance by, the principles, as the case may be, upon which the treatment for that disease should be founded. This should not be, considering that we are so well acquainted with the cause of tinea. If I am not justified in using the term purposeless to our treatment of the different kinds of ringworm, at least I may substitute for it those of slovenly and empirical; for, absorbed as most of us are with the one idea of killing the parasitic spores and mycelial tubes with some outward application, we take about as little notice as is possible touching the kind of soil in which the fungus luxuriates; of the means to be adopted to alter that, so as to

make it cease furnishing the suitable pabulum for the parasite; of the mode in which we can gain the best access to the fungus-germs, in the handling of some remedies; of the mode in which we can readily stay the spread of disease or the cropping up of fresh points of mischief by the dissemination of the fungus elements; and of the acts to be avoided, lest we possibly retard rather than aid the cure. I propose to sketch the principles which should guide us in our treatment of the tinea; to point out briefly the reasons for employing particular remedies, and in certain modes and amounts rather than others.

PRINCIPLES OF TREATMENT.—Fungi are the true cause of the lesions of the hair and epithelium—viz., the dryness, the brittleness, and the loss of the former, and the disturbance in the growth of the latter—found in and characteristic of the tinea. But fungi do not flourish upon healthy surfaces. This is a great clinical truth. Those upon whom fungi luxuriate possess, speaking in general terms, the lymphatic temperament; or, as I prefer to put it from a therapeutical point of view, persons attacked by ringworm assimilate very tardily, and are deficient in, fatty matter. It follows then that our main object in the treatment of the various forms of ringworm is to destroy the fungus, and starve it out as far as possible by altering the soil in which it flourishes. I may remark here that time alone may in some cases work a cure, and this is to be accounted for no doubt in great measure by the alteration induced in the solids and fluids of the body during the interval between attack and cure; but the latter is a very slow affair indeed. Further, the varieties of tinea—that word being used, at my suggestion, and adopted by the College of Physicians as the generic term for vegetable parasitic diseases of the skin—are: tinea favosa, t. tonsurans, t. sycosis, t. circinata (ringworm of the surface of the body), t. kerion, t. tarsi, t. versicolor, t. decalvans, and onychomycosis. But the fungi found in these several varieties belong, as I have long stated, to one species; consequently, as regards the mode in which fungus diseases or parasitocides operate in each case, there is no difference, and the same parasiticide, *ceteris paribus*, acts equally well in either of the tinea. What I mean by this is that we need not seek for different applications in the several tinea, because

therein exist parasites which vary in nature or species. The propositions above enumerated imply the need of both general and local remedies. This is a rule which, however, has its exceptions. Occasionally the application of parasitocides suffices at once to exterminate the fungus and to remove the disease. But this happy result takes place only in cases of ringworm which are of recent origin, or, in other words, in those instances in which the parasiticide can gain ready access to the fungus elements, when these latter have not made their way far down into the hair follicle. When the vegetable parasite has reached the bottom of the follicle, and got to the papilla, then it is a difficult matter to bring the destroying agent into contact with it, and it becomes a point of supreme import to do what we can, by internal means, to change the supply of pabulum which suits its free growth. We conclude then that in all but the most recent cases, for the treatment of all forms of ringworm or the tineæ, general remedies are needed to alter the soil, and local parasitocides to destroy the fungus. The growth of the fungus in a tineæ leads, as a final result, where the hairy parts are attacked, to baldness and irritation of the scalp, and the application of parasitocides requisite to destroy the fungus often seriously disturbs the nutrition of the affected part, and leads to eruptive manifestations, folliculitis, œdema, and the like. These and like changes may be termed the consequences of the real disease. Hence we advance a step further and say that we have to *alter the soil, to kill the fungus, and remedy the consequences of the parasitic attack.* And under these three heads I shall proceed to give further details.

(a) *General Treatment.*—Most cases of ringworm of course occur in children—I suppose it will be allowed—in such as are of a lymphatic temperament, in those markedly strumous, or who are thin, fair, and pallid. Even in the instances of children with dark hair, some of the evidences of a lymphatic temperament are not wanting. What I particularly wish to emphasize here is the fact that in very many instances children attacked by ringworm will be found to have been in the habit of taking very little fatty matter, or, if taking it, to have assimilated it badly. Mothers and nurses will, in reply to questions, state that this or

that child will never "touch a bit of fat," and the frequency with which the fat of meat is scrupulously avoided has long struck me as a remarkable fact. But supposing children do eat fat, we often can readily explain why it is not assimilated; the stools are pale or clay-coloured, the digestive act performed with difficulty or discomfort, and the tongue is pale, the urine loaded, and headache is frequent, and soon there are symptoms that point to an inactive liver and scanty biliary secretion, in connexion with which deficient absorption of fat from the intestinal tract must be associated. As a point of practical importance, then, I find it of the greatest service to recognise, over and above the propriety of removing anæmia, debility, and other causes of weak health, the peculiar necessity for exhibiting to children attacked by ringworm a large amount of fatty matter, if not in the food, at least in the shape of cod-liver oil, and of preparing the way for its due assimilation by removing dyspepsial conditions and hepatic torpor. The conjoint exhibition of alkalies and bitter tonics is under the latter circumstances most useful. This line of treatment is emphatically called for in *tinea favosa* and *tinea tonsurans*. In the former disease it is important to review the general nature of the diet, and to increase its meat and milk items when deficient in amount. Fresh air, extreme cleanliness, and the other hygienics are also requisite. If there be conjoined to ringworm a tendency to or actual eruption, and the latter be scaly, or the attacked present the nervous temperament, arsenic and iron in combination may be given, but I still prefer the cod-liver oil. Let me repeat that this often fails to do good, or is tardy in so acting, if we omit to put the digestive organs into due working order so as to assimilate it. In *tinea circinata*, or ringworm of the surface,—and this includes *erythema circinatum*, *eczema marginatum*, the so-called *herpes circinatus furfuraceus*, &c.,—general remedies may be called for, if the disease is chronic and there be many spots here and there scattered over the body. Here I do believe arsenic acts very well internally in aid of local measures; there is clearly a condition of nutrition oftentimes very favourable to the rapid development of the mycelial threads of the trichophyton vegetation which is negatived by a course of arsenic. It would seem as if the nutrition of the skin were altered rather by a want of nerve tone than

ought else, and for that reason the arsenic acts well ; in other cases the supply of fat, alkali, or large doses of the mineral acids may be preferable if the strumous tendency is decidedly marked. In tinea sycosis—a rare disease, and one which must not be confounded with the very common one of simple inflammation of the follicles of the beard—little can be done by internal remedies. Now and then the affection occurs in a markedly strumous adult, and here the indication is clear. But in other instances dyspepsia of a chronic and indolent kind may be present requiring its appropriate treatment. I am not certain that good results do not follow the use of the bichloride of mercury with bark, or the bromide of potassium in connexion with local measures where there is much induration. Tonics, however, always do good. In tinea decalvans, beyond the dilute mineral acids, quinine and strychnia (the latter in elderly subjects), nothing is called for. We now and then hear that arsenic has done wonders, but I do not believe that it has any special effect in destroying the fungus. In adults worry and dyspepsia sometimes aggravate tinea decalvans, and these must be remedied. Tinea versicolor, or chloasma as we in England term it, is always removed by local means alone. The contrary is sometimes stated, but stated, so far as my experience goes, upon very erroneous data. So far for general treatment.

(b) *Local Treatment.*—Let me try and state as briefly as I may be able the objects to be attained—for they are not one, but several—in our local treatment, and the reasons which lead us to adopt certain means of attaining these objects, and the mode of employing these said means.

Firstly. We must, whenever a case of ringworm affecting the hairy parts comes under our notice, remove every particle of hair that prevents our obtaining a clear view of the diseased spot. I think it safest to do this in all instances even where the places are tiny and recent ones, and for the reason that our remedies should be applied to the apparently healthy surface for a certain distance around the actual diseased-looking place, because the germs of the fungus invade freely before evidencing their presence by actual irritation and redness. Frequently fresh spots spring up unobserved, and get ahead, in the immediate neighbourhood of small spots, and also in other

parts. It is important therefore to determine how long a disease has existed when it first comes under treatment; if it be only a week or ten days, we may hope that no spread has taken place from the original spot, but if it be an old affair, and the nurse or other person in charge have observed two or three places here and there dispersed over the scalp, and other children have the ringworm as well, and especially if the disease be rapidly increasing and severe in the few spots that exist, I believe it is the wisest plan to take the scissors and cut the hair off close to the scalp, save about the front and back, so as to leave the appearance of a band of hair when the cap or hat is on the head. It is not so necessary to crop off the hair in *tinea decalvans*, because the loss of hair is so conspicuous that it at once indicates the seat and extent of disease; but the same rule as to the necessity of using remedies beyond the limit of the apparent disease is doubly needful in this variety of *tinea*. Well, having cut short the hair, we are enabled to see the contrast at once between the upright and shining hairs of health with their connected healthy scalp, and the dull, brittle, twisted and broken off hairs and the scaly or inflamed scalp of disease. If there be much crusting as in *favus*, or scalliness as in *tinea tonsurans*, we have recourse to cleansing by poulticing and rubbing in oil, and then we may, to destroy the fungus germs free about the surface, keep the scalp bathed in a solution of hypsulphite of soda $\frac{5}{8}$ ss to $\frac{5}{8}$ vj of water, or sulphurous acid one part to four or six of water. In this way in a couple or three days we have a perfectly clean surface, and we can then see the exact extent of disease in contrast to the healthy parts, of course. In the slightest cases, and in ringworm of the non-hairy parts, this preparation is needless, save, as before observed, in regard to clearing the hair away from actual diseased spots.

Secondly. We should take measures to prevent the dissemination of the disease from spot to spot by the transplantation of spores and spore tubes. This is effected by observing scrupulous cleanliness, by using parasitocides to the whole scalp if the disease is severe, and by oiling the scalp also. The collection of scales must be prevented also. I am in the habit of telling nurses or parents to care for these cases of ringworm thus. The parasiticide application is to be applied say twice

a day; that is, in the morning, after the head has been carefully cleansed and washed with soap and water, and at night. After each time of using the parasiticide the scalp should be pomaded over lightly, or covered with rag wetted with a solution of the sulphurous acid or the hyposulphite of soda. Ordinary oil or pomade may be quite as efficacious in some cases, provided it be fairly applied so as to grease the scalp.

Thirdly. We should in marked cases get away as much of the fungus as we can, and that bodily—bodily with the hair, where that exists, and when it is loaded with the fungus germs. This leads us to the question of epilation. Now in the three tineæ which attack the scalp—*t. favosa*, *t. tonsurans*, and *t. decalvans*—epilation is called for. This statement is in contradiction to the general teaching on the subject, but I know that it is true. In favus the application of parasiticides must go hand in hand with epilation, an inch or more of the scalp being cleared of its hair each day. In *tinea tonsurans* many of the hairs are brittle, and break away when we attempt to pull them out; but many others are actually removed, and the attempt should be made to get as many away as possible, and as in the case of favus a certain area should be cleared each day, parasiticides being used after each sitting. I feel sure that a very erroneous idea is abroad that epilation is useless in *tinea tonsurans*. If the hairs are not very loose, and the epilation gives rise to pain, it is then advisable to rub in the oil of cade freely, once or more, or to blister the diseased spots, when the hairs are loosened and can be readily extracted. But it must be remembered, both in favus and *tinea tonsurans*, that some of the fungus elements may be left behind in the follicle, and growing up into the hairshaft leads to disorganization of the hair; under these circumstances the hairs must be again removed by epilation. In *tinea decalvans* we often see short, club-like broken off hairs around the extending edge of the disease; these are to be carefully extracted, for they contain the fungus elements. They are almost invariably overlooked. In *tinea sycosis* epilation is absolutely needed. It is very important indeed, I think, when *tinea tonsurans* is in progress, to remove the short dark stumps of hairs which sometimes abound over the diseased patches. These stumps have loosened their attachment to the papillæ, and are like so much

dead matter upon which the fungi luxuriate. They are always loaded with spores of large size, and are as so many laboratories, capable of disseminating the germs of disease far and wide. What we need to do in addition to killing the actual fungus is to prevent its re-growth in the part from whence it has been exterminated. But, speaking of epilation as a whole, how long or how many times is it to be repeated? The microscope and the general aspect of the disease must guide us. If the hairs which spring up over a patch look diseased; if they are brittle and loaded with spores; if the formation of the root-sheath of the hair is destroyed and the root itself be invaded by the fungus, then we must epilate and use parasiticides again—it may be twice, it may be three times. This brings us, fourthly, to *the use of parasiticides*. Where the disease affects the general surface of the body, we at once start in the treatment with these remedies; but where the hairy parts are implicated, save in the slightest cases, the employment of the preparatory measures above described is requisite. Now there must be some distinct principle upon which we should use these agents. Our object is to bring them into contact with the parasitic elements, and this in the slighter forms of disease is readily done by friction, or by using, as a *medium* for their exhibition, some fluid that penetrates the tissues. In severe and long-standing cases epilation is absolutely needed to be practised so as to clear away the plugging up of the follicles by the diseased hairs.

Taking the general run of cases, I think the lesson we need to learn in regard to them is the use of friction, with ointments of a weakish description *quoad* the parasiticide with epilation when this is called for, rather than the application of strong and active remedies; at least I have seen many bad results from the too free and too frequent use of strong and perhaps vesicating parasiticides. If we employ the latter, it should be *occasionally* but *effectually*. I have had under my care cases in which the greater number of the follicles of the scalp have been inflamed simply from the use of strong remedies repeatedly applied; sometimes there has not been a vestige of fungus present, the inflammatory state of the follicles being taken for an aggravation of the tinea; microscopic examination should have settled the difference in a moment. Let me take the varieties of ringworm in

detail, and the simplest first. *Chloasma*: this is very easy of cure by the use of a lotion of $\frac{3}{4}$ ss of hyposulphite of soda in $\frac{3}{4}$ vj of water. The skin should be first washed with yellow soap and water, and the lotion at once applied—the part being frequently dabbed with it. The lotion should be continued for some time, a fortnight in severe cases, after the eruption has disappeared. The use of the soap and water is to get rid of the natural fatty matter, so that the watery lotion can act efficiently. It is a good plan to sponge the skin just before using the lotion with a little weak vinegar. If the *tinea versicolor* be very old and extensive, it may be advisable to soften up the desquamatory patches by rubbing on a little liquor potassæ. I have cured cases at a sitting by the use of liquor potassæ first, and then a strong sulphurous acid lotion.

Tinea circinata is an easy affair to cure. A solution of caustic in the spirits of nitric ether—in the proportion of two scruples to an ounce—or even tincture of iodine, or acetic acid applied once or twice, will frequently suffice. I prefer the use at the first of Coster's remedy; that is to say, a drachm of pure iodine dissolved in an ounce of oil of petroleum, or oil of tar, to be followed after the clearing away of the scab which forms—that is, in two or three days—an ointment of ammonio-chloride of mercury, from ten to thirty grains to an ounce.

In the case of so-called "*eczema marginatum*," which affects the inner and upper part of the thighs, I use a washing with soft soap, and the use of hyposulphite of soda lotion, or an ointment of bichloride of mercury four to six grains, and creosote three or four drops to the ounce of lard. But I lay great stress in all these cases on the removal of the normal fatty matter by soap before using parasitocides, if in solution.

Burmese ringworm, which affects the pubes, the axillæ, and other parts, often appearing as raised erythematous circles in connexion with what might be termed erythema circinatum about the body, is best cured—and I have had several bad cases of the kind—by the repeated use, four or five applications, of the iodine and tar application before referred to, using at the fag-end of the treatment an ointment of the pyroligneous oil of juniper and ammonio-chloride of mercury. In true parasitic sycosis epilation is called for, and then a para-

siticide may be used at the same time. I know nothing better than the bichloride ointment. The microscope must be constantly used to determine when the destruction of the parasite is effected, and the hair-forming apparatus is doing its work fairly, lest we produce irritation that is taken for an increase of the disease.

But let us turn to the cases where the scalp is affected. I have already spoken of epilation being necessary in all varieties, and have defined the conditions under which it is to be practised. I should add that in *tinea kerion*—that variety in which the hair follicles are inflamed and the disease-patch is swollen and boggy-like—the hairs being loosened and coming away in the albuminous discharge, it is best to extract what hairs are loosened.

Well, in severe and recent cases we should make at the outset, after having got a clear surface to work at, a free and effectual application of some strong parasiticide. In *favus* and in *tinea tonsurans*, where the hairs are not partly loosened, I often use an alcoholic solution of bichloride of mercury, in the strength of two scruples of the latter to about six drachms or an ounce of the spirit. This is gently brushed over the part and blistering ensues; the hairs then become loosened the next day or so, and can be removed. The application causes pain, and should not be repeated, if it seem desirable, for some days. Another plan is to paint over the diseased patches Coster's paint—the iodine and tar before mentioned—and this may be done, say, two or three times, at intervals of four or five days, the black scab which forms being removed for the purpose.

But we should be on our guard against these remedies, if their use is followed by the appearance of many or the persistence of little pustular heads, or any pustular eruption, and I do not think they should, as the rule, be used to cases of *tinea kerion* or to *tinea decalvans*. But how are we to proceed in severe cases? Why, I believe that really satisfactory subsequent treatment must be based entirely on *microscopic* examination. So long as there are loosened and brittle hairs, or hairs loaded with fully-sized spores, we must use strong parasiticides, but with this caution, that we be on the look-out for the presence of much effusion or pus into the follicle, as evidenced by the masses which come away attached

to the hair-shafts. It is also to be remembered, that whilst we may roughly guess the progress of the disease by the look of the hairs, for they will be inclined to grow straighter and more in their natural direction, and not in a twisted one, when less invaded than before with fungus, yet the microscope can alone tell us whether the fungus germs are still plentiful in the follicle, and are being carried up through the papilla into the growing shaft. When we find, however, the hairs looking more healthy, and an attempt to form better roots and less fungus in the follicle, we must seize the moment just short of that time when "irritation" is about to occur and weaken our parasiticides. I am never disappointed with a weak bichloride of mercury ointment or the one used for itch — sulphur ʒss; white precipitate ℥vj; creasote gutt. ij; and lard an ounce. This should be rubbed in freely and not smeared on to the spots; that is the secret of its success. So long as the microscope detects spores in the follicles or the hairs, so long should we continue it. Oftentimes, in severe cases, by the above plan of treatment cases will last for only half the usual period. In *tinea kerion*, the milder forms of parasiticides, such as a lotion of sulphurous acid or the last-mentioned ointment, will rapidly aid the cure. In *tinea decalvans*, if the disease is acute and in rapid progress, I apply Coster's paint to the extending edge of disease, and for half an inch or so beyond its boundaries, and then use very freely an ointment of bichloride two or three grains to the ounce, extracting all short stumps of hairs, and whenever these appear I use the stronger parasiticide. When the progress of the disease stops, and young and new hairs appear, then a stimulating plan of treatment is called for. Sometimes the scalp gets puffy; the application of tincture of iodine every other day does good in these instances. In some old standing cases of *tinea tonsurans*, the disease becomes reduced to two or three smallish spots about the crown of the head, and may be felt and seen, according to the nurse's or parent's account, as little "knotty," or "scurfy" places. On examination we find a little erythematous patch the size of a threepenny piece or more, scaly, or slight crusted, perhaps tender, and it may be showing one or more pustular heads. We may possibly detect, in some cases, short broken off hairs or the fungus elements; if so, we must simply

epilate and use a strong ammonio-chloride of mercury ointment. But in other cases no trace of fungus can be seen, and these are they in which the yellow pustules are found. I have now seen many of them; they are instances of folliculitis, induced by the long-continued use of irritating applications, and only need to be let alone, save using some slight astringent, to get well. The treatment of secondary eruptions, eczema, pityriasis, and the like, must be conducted in the ordinary manner, and baldness prevented and the re-growth of the hair be encouraged by friction with some stimulant want: in tinea decalvans, none is better than tincture of *Lytta* 6 drachms, distilled vinegar ℥iss, glycerine ℥ij, tincture of *nux vomica* ℥ss, and rose-water to 6 ounces, to be used with friction night and morning. My chief object in running over the treatment of ringworms is to impress upon practitioners the paramount necessity of a constant appeal to microscopic appearances as the best guide to the effects produced by the use of parasiticides. It not unfrequently happens, that the use of parasiticides is either not sufficiently pushed where the disease is making rapid progress, or is employed in cases where the results of the irritative action of parasiticides in the follicles are mistaken for a continuance or aggravation of the disease. Further, I wish to point out that we do not employ friction sufficiently in connexion with the applications we make of parasiticides.

A GLANCE AT AN OBSOLETE MATERIA MEDICA.

BY W. BOYD MUSHET, M.B., M.R.C.P.

IN the course of reading of some of the authors of the seventeenth and earlier portions of the eighteenth centuries—for information, curiosity, and special purpose—I have encountered numerous quaint and absurd medicaments. Of remedies generally, it is certain that more were drawn by our forefathers than by us from the organic kingdom, or, at any rate, that mineral productions were by them less extensively employed. Whilst, under many circumstances of treatment, and in occasional correctness of their views, we have advanced little beyond our predecessors; in other particulars, we have so simplified and improved, that it seems almost impossible to reconcile the various aspects of their knowledge,—in some respects so deficient, so uncertain; in some so complete and sterling. In some cases the remedies ordered were parts of the animal more or less corresponding with the part presumed to be affected, as human cranium in epilepsy and apoplexy, and powder of dried secundines, by Waldschmidius and others, in retained placenta. This practice evidently arose from an erroneous and superstitious notion of similitude, or mysterious affinity between the medicinal agent and the part diseased. A few of the old remedies have lingered until recent times, and may be observed in modern Pharmacopœias, as *chelæ cancerorum*, *testæ*, *fel taurinum*, *rasa cornu cervi*, *succinum*, *spongia usta*; and the effete terms, *lohoch*, *linctus*, *pastæ*, *trochismi*, *rob. julapium*, &c., though they have almost vanished, are to be found in works dating from the commencement of the present century. Many trivial medicines which survive amongst the vulgar date far back to the practice of former physicians, as the compound of oil of almonds and syrup of violets, syrup of buckthorn, dragon's blood, armenial

bole, cochineal, sal prunella, and balsam of sulphur; and the Gascoign balls of the shops (so named from their inventor) are the factitious representatives of the once famous bezoar stones, now exploded and forgotten. In the same category are—I adopt the technical language of the period—the plants celandine (*Chelidonium majus*), fenugreek (*Fenugreekum*), bistort (*Bistorta*), burdock (*Bardana major*), plantain (*Plantago*), chervil (*Chaerisfolium*), greater and lesser centaury (*Centaureum majus*, *C. minus*), savin (*Sabina*), horehound (*Marrubium*), succory (*Chichoreum*), madder (*Rubia tinctorum*), turmeric (*Curcuma*), sweet flag (*Acorus*), agrimony (*Agrimonia*), ground ivy (*Hedera terrestris*), brook lime (*Beccabunga*), elecampane (*Enula campana*), angelica, hedgehyssop (*Gratiola*), wake robin (*Arum*), avens (*Caryophyllata*), balm (*Melissa*), tansy (*Tanacetum*), horseradish (*Raphanus rusticatus*), rue (*Ruta*), bryony (*Bryonia alba*), garlic (*Allium*), purslane (*Portulaca*), mullein (*Verbascum*), contrayerva, yarrow (*Millefolium*), male pæony (*Pæonia mas*), wormwood (*Absinthium vulgare*), alder (*Alnus nigra*), carduus benedictus, asarabacca (*Asarum*), bugloss (*Buglossum*), houseleek (*Sedum majus*), rocket (*Eruca*), sage (*Salvia*), pellitory of the wall (*Parietaria*), mugwort (*Artemisia*), germander (*Chamaedrys*), borage (*Borago*), fumitory (*Fumaria*), sorrel (*Accosa*), hellebore (*Helleborus niger*), mallow (*Malva*), marshmallow (*Althæa*), dittany (*Dictamnus creticus*), smallage (*Apium*), black cherry (*Cerasus nigra*), mandrake (*Mandragora*), basil (*Ocimum*), galangal (*Galanga minor*), comfrey (*Symphytum*), mistletoe of the oak (*Viscus quercinus*), restharrow (*Ononis*), lily of the valley (*Lilium convallium*), polypody of the oak (*Polypodium quercinum*), speedwell (*Veronica mas*), pilewort (*Chelidonium minus*), dropwort (*Filipendula*), St. John's-wort (*Hypericum*), lovage (*Leristicum*), melilot (*Melilotus*), fever few (*Matricaria*), coltsfoot (*Tussilago*), and a host of others, which, with their reputed virtues, may be found yet arranged under their respective orders in Gray's Supplement to the Pharmacopœia (1828). After becoming obsolete amongst physicians, these remained, and remain, to some extent established in the opinion of the public, and are still vended by Coffinists and herbalists. Many of them were familiar to the Arabians, to Dioscorides, and Celsus.

Ettmüller, a leading systematic writer of his time, is con-

spicuous for the recommendation of disagreeable and even revolting prescriptions. Recourse to unnatural medicaments appears to have culminated in this physician, and it is scarcely too much to affirm, that the unwitting patient, even under the most approved therapeutical methods, was oftentimes degraded—from the administration of human blood, fat, urine, skull, placenta, and mummy—to the verge of cannibalism. But at the era in question all branches of learning were tinctured with barbarism and superstition. Even the Church did not escape, as could be profusely illustrated; but it might be accounted irreverent, and would certainly be foreign to the subject. Most of the objectionable (and useless?) ingredients in the *Materia Medica* of the period to which I am about to refer appear in the London and Edinburgh Dispensatories of coeval date. Some of the horrid simples and compounds doubtless possessed active qualities, and exerted an effect upon the system. Of such, if ordered at all at the present day, the essence is retained by the employment of their leading principle, the offensive article in substance being rejected. It must, likewise, be borne in mind, that these were frequently conjoined with medicines of well-ascertained value, as with opium, steel, castor, henbane, hellebore, Peruvian bark, asafoetida, the mineral acids, carminatives, aperients, aromatics, and various salts, to which the chief good must be ascribed, though imputed (and is it not so often in our own time?) to the former. Again, many of their mixtures, decoctions, infusions, tinctures, pills, plasters, syrups, ointments and other galenicals leave little to desire in way of amendment, and have been handed down almost unchanged. Some compounds of very ancient origin, however, as the *Mithridatium*, or *Confectio Damocratis*, contain fifty ingredients; the *Theriaca Andromachi*, or Venice treacle, upwards of sixty (Quincy)—in each case, mostly vegetable aromatics in combination with opium. The *Mithridate* of Celsus contains only thirty-five simples (*Lib. v.*). These were in high repute as alexipharmics.

It is, in fact, undeniable that very many of the old formulæ are ridiculously complicated and overloaded.

The celebrated elixir *proprietas* of Quincy's Dispensatory (1736) is of the same composition as the *tinctura aloës composita* of the *Pharmacopœia* of 1851.

With regard to their preparations of iron and other minerals several are almost identical with those of to-day, though we have, of course, greatly advanced and certified their processes, which are clumsy and inexact to modern views, and it must be added that a few of their chemicals are, at the least, as indeterminate as the *pulvis antimonii compositus* of the last London Pharmacopœia.

But it is not my intention to dwell on, or trace back, ordinary or existing pharmacological preparations, but to take a brief retrospective glance at those distasteful remedies, which during the last hundred years have been gradually discarded, mainly in consequence of the rapid enlightenment of rational medicine by general physiological and chemical discovery.

A prominent feature of the past is the employment of the ordure of animals in disease—a practice in vogue in the days of Dioscorides and Celsus.

Stereus columbinum was used as a cataplasm in inflammation of the stomach and pestilential bubo, and the same (*stereus columbæ*) is arranged by Celsus amongst the evocant remedies (*evocantia*).

Stereus sparonis was deemed a specific by Pitcairn in vertigo and preternatural commotion of the spirits in the brain, and also in epilepsy by Ettmüller. The brain of sparrows mixed with calves' brains dried in smoke was much commended, *fumus nicotianæ vel avium pennarum* being applied during the paroxysm, a proceeding yet adopted by the vulgar. The same professor recommended *stereus equinum* in hypochondriasis, and *stercora avium et animalium* in jaundice, in which disease Lister also directed *stereus anserinum aut candidum ex avium fimo*; whilst for the poor (*pro pauperibus*) *stereus ovinum in cerevisiâ infusum* was substituted on economical grounds. In hæmorrhagia narium, Ettmüller ordered *cranium humanum*, *stereus asininum vel suillum* internally, and externally *stereus porcinum recens excretum aut bufo siccus*. *Stereus babulum aceto nicotum* was held by the same to be an admirable resolvent for scirrhus tumours, and *oleum stercoris humani* very good in cancerous ulceration. Oil of frogs was also reckoned very good, whilst as an internal remedy, *verruccæ calcibus posterioribus equi masculi adherentes* dried and reduced to powder were adminis-

tered in half-drachm doses, twice a day, as an empiric remedy. *Album canis* (*album græcum*) was employed as a gargle in cynanche, and was also administered in hæmorrhage. *Stercus vaccinum* was used as an epithem in intestinal obstructions. In similar cases, some recommended the hot caul of a gelded lamb or the blood of bats to be applied to the abdomen; and in inflammation of the great intestine the caul of a sheep, killed in the very room of the patient, laid upon the belly and shifted twice or thrice, was esteemed of excellent use. *Succus fimi equini aut ovini, stercus columbinum*, powdered with gunpowder, the pizzle of a whale or hart, soot of wood fire, boar's teeth, pike bones, bones of the perch and carp, volatile salt of the jawbone of a pike, blood of a goat or of a hare strangled after hunting, were regarded as specifics that dissolved stagnating blood in pleurisies, and all inflammations of the chest. To allay the pain, the fat of a country mouse or *stercus gallinæ* was recommended externally.

In incontinence of urine, the most noted specifics were the ordure of a she-goat, the powder of dried mice, powder of hogs' hoofs, throat of a cock roasted, pounded, and given in wine, the powder of a calcined hedgehog, the inner tunicle of a hen's ventricle, the fish found in the belly of a pike, the powder of a sow's uterus, or, for men, of a boar's pudendum.

Amongst the specifics for epilepsy, Ettmüller recommended *spiritus sanguinis humani, cranium humanum, dens hippopotami*, human secundines; whilst Pitcairn prescribed *jusculum eum lumbricis terrestribus, stercus columbinum*, and elk's hoof (*ungula alcis*). The last-mentioned appears with human skull, castor, &c., as an ingredient in the pulvis anti-epilepticus of the London and of the Edinburgh Dispensatory of 1727.

The male pæony was also regarded as a specific, if gathered in proper season; that is, at noonday in July or August, or before sunrise when both moon and sun are in Aries, during the wane of the moon. It was given inwardly, and tied around the neck. The flowers of the lily of the valley gathered before sunrising, whilst wet with dew, and distilled with Spanish wine, to which castor was often added, were likewise esteemed. The mistletoe of the hazelwood and the catkins were supposed to be endowed with an anodyne sulphur, and to be very successful in

redressing the disorder of the animal spirits. The mistletoe was to be gathered in March during the wane of the moon. The mistletoe of the oak was also held useful. Many other remedies in the vegetable province were much regarded. Amongst animal preparations, the spirit, oil, and volatile salt of human blood from a beheaded criminal were celebrated. The spirit of a human putrefied placenta, or the powder of it, dried in an oven, was valued almost as an *arcanum*. The skull of one who had died a violent death, given in powder, and its spirit and volatile salt, were deemed of wonderful efficacy; and its oil applied to the vertex was reckoned to prevent the epileptic fit. Human brain and human bones were also much applauded. The liver of green frogs, liver of a wolf, gall of a black cat, spirits of urine, blood of a hunted hare, and quails' eggs were frequently employed. Amber, camphor, opium, and assafoetida were also used, mostly in combination with the preceding. Amulets of elder and masterwort were worn externally, and cephalic bags, plasters, ointments, and specific oils were applied to the back, vertex, or affected part. In apoplexy, a cataplasm of herring pickle (*de halecibus*) was recommended. Sage, rocket, cubebs, cardamoms, and mustard-seeds were highly prized as prophylactics, and as corroborants and preservatives after an attack had once occurred.

In paralysis, Ettmüller directed *millepedes, lumbricalia, formices, et riparina*; and Willis ordered, as part of the treatment, *emissio membri resoluti intra ventrem vel thoracem bestie recens mactata*. Sage was reputed to cure paralytic mutism (*obmutescentiam solvit*); and this herb, indeed, was invested with marvellous virtues (*salvia a salvendo*), and revered by some as a panacea. Hence the motto over the School at Salernita:

“Cur moriatur homo cui salvia crescit in horto?”

In loss of memory (*memoria læsa*) Sennertus, amongst other rules, advised the patient to abstain from pork, duck, goose, fish, milk, cheese, pulses, cabbage, lettuce, poppies, and summer fruits (*fructibus horarum*). Tea boiled in wine was, by certain others, deemed a sovereign remedy for corroborating the memory and judgment.

In hysteria, *pellicula interior ventriculi caponis vel gallinæ*

was directed to be administered, or the oil of frogs, obtained by boiling live frogs in olive oil and expressing. In melancholia, the arterious blood of an ass was arranged amongst the specifics. In cases of mania, an infusion of human nails was used as a strong emetic in preference to antimony. In paralysis of the bladder, the brains of magpies were recommended to be given, with the external application of oil of scorpions amongst other treatment. *Stereus boris recens*, with poppies and sal ammoniac, was directed as a cataplasm to the feet by Hamilton in puerperal mania. In the stuttering of children, castor in substance, or its essence, was much lauded as an application to the frænum linguæ. Oil of earthworms, by distillation, and *aurum mosaicum* were recommended in singultus and convulsive coughs. In cramps and permanent contraction of the muscles, a liniment containing human fat was highly esteemed, as was also the fat of dogs, foxes, and badgers, and goose tallow. According to Riverius, ants' eggs and the juice of an onion cure the most inveterate deafness. In hydrophobia, Mead (after Galen) held that river crabs, gathered in the dog days and calcined alive, were a specific. The blood, liver, heart, and hair of the mad creature itself, pulverized and given in drachm doses, for three days, were also employed. To the wound the hair of the animal was sometimes applied, and sharp cataplasms or cupping-glasses, though the most effectual agent was considered to be the actual cautery, as abolishing the seminal crasis of the poison. (Now there is a medicine, which was much vaunted by the older practitioners as an antispasmodic, and which was specially recommended in hydrophobia by Dr. John Wall, of Worcester, in 1744, I allude to musk. In the *Philosophical Transactions*, this physician published a number of cases bearing evidence in favour of the drug in hydrophobia, hysteria, hiccough, mania, febrile delirium, and convulsions. Musk had been previously employed, as by Ettmüller, in infusion with camphor, for external application to the head in mania. The dose directed by Dr. Wall was about ten or twelve grains. It has been favourably mentioned by successors of Dr. Wall, especially by Cullen and Swediaur but its high price has doubtless proved a great drawback to its use, as well as tended to impair its genuineness. It certainly deserves a trial by us moderns, in this age of thera-

peutical experiment, to determine its power, as I honestly confess that I have never witnessed its administration.) In anaphrodisia, *testes galli*, spirit of cock's blood, blood, brains, and penis of a cock or bull, killed during coitus, shaving of a bull's horn taken under the same circumstances, troches of vipers, or of pullets fed with vipers, were most in favour. Ambergris and civet were likewise resorted to; and milk, Spanish wine, chocolate, dates, eggs, and oysters were directed to be included amongst the diet. Hence Byron says :

"Eggs, oysters too, are amatory food."—*Don Juan*, Canto ii.

In inflammation of the liver from excessive venery (the ætiology is to us hardly satisfactory), the liver of a living black-cock was to be cut out and bruised in four ounces of vinegar of roses until quite dissolved. The liquid was strained, and exhibited warm as a draught. In cases of atrophy, *pinguedo humana* was mixed with oil of laurels and used as an ointment. According to Gray, this remedy was still adopted in the hospitals of Russia in 1828.

Decoction of the shavings of the penis of a whale or stag was esteemed amongst the specifics for dysentery by Ettmüller, who also reckoned highly the shavings of a man's skull who had died a violent death, the moss of the skull, powder of the tooth of the sea-horse or unicorn, blood of a hare killed by dogs, the blood of a lamb killed after frightening, dried livers of serpents and vipers, livers of green frogs, and powdered horsehoof in the same disease. The jawbone of a pike was strongly recommended in convulsive colic.

Decoctum capitis arini vel pedum vitulinorum, vel intestini vervecini, with olive oil, was thought highly serviceable by Purcell as an injection in colic. In jaundice, *urina potus, pediculi, lumbricalia, viperina, stercora, et lapis in folliculo fellis tauri*, were ordered by Ettmüller. Some advised three or four living millepedes to be swallowed by the patient. Rosemary was believed to be a specific against hæmorrhoids (*rosmarinus singulis auroris comestus hæmorrhoides penitus tollit*), and oil of stagflies and oil of millepedes were regarded as very good for innunction. *Enema urinae sani* was employed by Willis in tympanites, and by Ettmüller in dropsy. In diabetes, a calcined cock's-comb

was deemed by many to be an *arcanum*. Mayerne highly approved of *oca fornicarum* in dropsy. *Millepedes ex vino rhenano et testæ ororum* were also in high repute as diuretics. In fact, millepedes were a very favourite remedy with most—as Sennertus, Riverius, Quincy, and Mr. Boyle—and were prescribed in cephalalagia, palsies, epilepsies, and as deobstruents in icterus, rickets, scrofula, pertussis, and ischuria, and Ettmüller thought highly of them in asthmata of all kinds. In strangury, Mayerne considered *apes siccate ex vino albo* to be a grand remedy. As lithontriptics, *urina hirci et tauri* were prescribed; also *sanguis hirci præparatus*, which was enjoined to be procured from the proper artery of a middle-aged goat about the beginning of summer. This was to be dried by the heat of the sun or a slack oven. The spirit of putrefied earthworms, the powder of scorpions, the bodies of crickets, and essence of wrens, were also much extolled.

In parturition, the expelling specifics (ecbolics) were *haustus urinae mariti*, *succus fimi equini* mixed with wine, castor, oil of amber, oil of hazelwood, borax, powder of an eel's liver and gall-bladder, powdered vipers, *pulvis testium equinorum*, powdered human after birth—the last most potent. Externally, a girdle of snakes' cast coats was applied, or an ointment of earthworms, juice of river crabs, and the fat of a fox or hare to the abdomen. Hamilton prescribed oil of almonds and syrup of violets in precatamenial pains.

Jusculum cancerorum fluviatilium, *oculi et chelæ cancerorum*, *margaritæ præparatæ*, *corallium rubrum levigatum*, were used as absorbents in diarrhœa. In rickets, Glisson recommended *enemata fimi equi non castrati*. Cataplasms of a swallow's nest were applied in quinsy; and a falling of the uvula was attempted to be cured by a mixture of yeast, spirits of wine, mastic, and amber to the crown of the head. A dried toad to the armpits was adopted in epistaxis occurring during the progress of fevers, and the same, or tied to the forehead, was employed in hæmoptysis. In the latter, mummy was also administered. Spirit and oil of human blood were much esteemed in hectic. A plaster of spiders, toads, and Venice turpentine to the stomach was deemed of much service in intermittents, and spiders and their oil internally.

Viperine medicines were highly valued by Willis in impetigo, elephantiasis, and leprosy. *Aqua limacum* was prescribed as a pectoral balsam, and in scurvy. Lister thought (universals being premised) that a mixture of cochineal and levigated cuttle-fish was very efficacious in the nocturnal pains of syphilis. As a sample of the therapeutics and style of the period (1699) I quote from Ettmüller—translated and abridged—the observations concerning scrofula. “The internal cure of the king’s evil is compassed by purging with sweet mercury and black hellebore, and administering the decoction of swallow-wort, pilewort, dropwort, and broom, or the following absorbent powder. Take of burnt sponge three ounces, bones of the cuttle-fish, jawbone of a pike, prepared crabs’ eyes, long pepper, white ginger, roots of pellitory of Spain, galls and calcined egg-shells, of each an ounce. Make a powder; dose half a drachm. The powder of lizards with honey in the form of an electuary is also of excellent use.”

Does not this prescription foreshadow the employment of iodine and antacids in scrofula, and hint such treatment to posterity?

To glance at the surgery of the period. In St. Anthony’s fire, amongst other remedies, water of cows’ dung distilled in May, and clouts dipped in hare’s blood or in the *sanguis primæ catumencie virginis* were employed externally. To a bubo in the axilla or groin, roasted onions and garlic, toads dried and soaked in wine, or a blistering plaster, if the skin were thick and the swelling obstinate, were directed. Pigeon’s milk warm from the animal was reckoned an excellent anodyne in burns affecting the eyes. Raw beef was applied to contusions and also to gouty parts, and the roots of Solomon’s seal as a cataplasm—both which practices yet linger among the people. In general contusion, Riverius recommended *corium verrucis recentis mactati* smeared with honey as almost infallible in its operation.

In cases of wounds, acids were strictly prohibited: hence the wound was to be kept safe from the injury of the air, which, it was thought, had a notable tendency to engender acidity; and *vulnerary* medicines were administered from their reputed property of subduing this tendency. Amongst these were *album*

græcum, earthworms, burnt river crabs, and the blood of goats. Ear-wax as an ointment was held to be of peculiar virtue in wounds of nervous parts. In gun-shot wounds, suppuratives were extolled, as tents dipped in spirits of wine, and the part was ordered to be covered with a liniment of oil of white lilies, in which puppies had been boiled until their bones were dissolved. To this boiled earthworms and Venice turpentine were added. For ulcers, especially chronic, digestives, mundificants, sarcotics, and epulotics were enumerated. *Ceratum resinæ*, yolk of egg, turpentine, myrrh, honey, and oily alkalies were amongst the ancient digestives. The mundificants included balsam of Peru, saturnine applications, vegetable decoctions, and certain mercurial ointments. The sarcotics and epulotics differed only in degree, amongst which were Turner's cerate, linseed oil mixed with lime-water, alum, and other astringents, and the escharotics.

The more fanciful and extreme remedies which I have mentioned, such as unicorn's horn, bone of a stag's heart, bezoar, elk's hoof, *album græcum*, *cranium humanum*, *stercus poronis et anseris*, *sperma ranarum*, &c., were derided by our countryman, Dr. Quincy (1736); but he nevertheless reposed faith in many others equally useless and ridiculous. In the Universal Pharmacopœia of Dr. Swediaur (1803), published in London, Paris, Leipsic, and Vienna, there is no inclusion amongst the compounds (*medicamenta composita*) of any of the disagreeable simples of the former century. This physician appears to have been of independent thought, unshackled by the prevalent unbounded reverence for Hippocrates, and rejected all substances whose value was not to some extent determined.

It may be objected that allusion to an obsolete materia medica is altogether purposeless; but I have thought it not without interest to review our progress, contrasting our past with our present *pharmaceutic* position—using the term in its original sense to signify that one of the three parts into which medicine was divided (*φαρμακευτική, διαιτητική, χειρουργική*), *quæ medicamentis medeatur*.

ON SOME ENGLISH SALT SPRINGS.

BY JOHN MACHERSON, M.D.

IT is probably owing to the fact that even our most inland places are not very remote from the sea, that but very little attention has been paid to our salt springs. Our *wiches*, though employed from the earliest times as sources of wealth to their proprietors, have been scarcely used at all for medicinal purposes, while similar springs on the Continent have supplied some of the most popular baths. The great value, indeed, of such springs is mainly for baths; most of them are too salt to be drunk with much advantage. Beneke, and those who have studied the subject most carefully, seem to have arrived at the conclusion, that something like forty to fifty grains to the pint—about the standard of Kissingen—is the most desirable strength for a drinking salt well; and observation is believed to have shown, that when a water contains a larger proportion of salt than this, it is better to dilute it, than, as is usual, merely to administer a smaller quantity of the water.

Viewed by this standard, the Buth waters are quite strong enough, and the old Sulphur Well at Harrogate is too strong; it indeed approaches in strength to the true brine springs, and its salt quite overpowers its sulphuretted hydrogen. The following table gives the comparative amount of common salt per pint in some salt springs:—

	Grains.
Harrogate	108·2
Nauheim (Salzbrunnen)	141·8
Ashby de la Zouch	152
Salzungen	1997
Middlewich	2049
Droitwich	2760

Although baths and pump-rooms were erected some years ago at Ashby de la Zouch, much has not been heard of it of

late years; but Woodhall spa has been so prominently brought before the public, that I went last autumn to visit it.

Woodhall spa is easily reached in about an hour by rail from Lincoln or from Boston. It lies in a flat, uninteresting country, with no village in the neighbourhood. There is a very fair hotel with pleasure-grounds adjoining it, and a good deal of wood has been planted around it. Still, in my opinion, scarcely any place could offer fewer attractions, and I saw it to the greatest advantage on a bright sunny day. There is a considerable resort of patients, chiefly of ladies, to the place, which has a great local reputation; but I heard complaints of the hotel, and lodgings are scarcely to be procured within a mile of the spring. There is no resident doctor. There is a nicely enough fitted up small pump-room, and there are some twenty or thirty bath-rooms. They have no apparatus for douching, but, as a substitute for such, they had a hydropult. The water, though very salt, is not unpleasant to the taste when fresh drawn; it is pleasanter when drunk at the well than in the pump-room. The spring was originally reached by boring.

The cases sent here for treatment are somewhat multifarious, apparently chiefly cases of glandular enlargement or of scrofula, and rheumatic affections with thickening of the joints. I also heard of some cases of skin affections.

There seems to be no question that a certain class of patients, long in hospital with chronic affections of a scrofulous nature, may benefit by these waters, much in the same way as they do by change of air to the sea-side and by sea-bathing; only bathing in the open sea can never be carried out as systematically as in indoor baths. The general analogy between the waters of Woodhall spa and those of the ocean is shown by the following comparison of their chief constituents, taken from Mr. Cuffie's account of the spa.

	Woodhall.	Sea Water.
Chloride of Sodium	152	174
„ Magnesia	10.5	32
„ Calcium	13	—
Bicarbonate of Soda	5.6	—
Sulphate of Magnesia	—	19
„ Lime	—	12

But the Woodhall spa has .63 grain of bromide of sodium and

·33 of iodide of sodium against the minute quantities of bromides and iodides present in sea water. Now it is to the presence of bromides and of iodides that the special virtues of the Woodhall waters are ascribed ; but is it reasonable to ascribe to them such virtues ? First as to drinking : a child who is ordered to take four ounces of the water in the day, takes in ·2 grain of the iodides and bromides together. An adult who is ordered twelve ounces, in like manner takes in ·6 grain of the same. If we admit that such quantities can operate on the system, we must be prepared to believe in infinitesimal doses, or to revert to belief in the occult powers of nature.

The small doses of chloride of sodium in the Woodhall water are doubtless useful, just as small doses of sea water were for a long time considered to be so ; but to introduce as much as 8 grains of the bromides and iodides into the stomach, the patient must drink 4 oz. of other salts. It is therefore simply impossible to prescribe to a patient any useful amount of bromides in the Woodhall water, without over-dosing him with other salts.

Then, again, if Woodhall water be compared with sea water for bathing, it is evident that the former must be less stimulating to the skin than the latter, as the gallon of it contains only 1,408 grains of the chlorides, while the same quantity of sea water contains 1,905 grains, and I presume that much absorption of the 8 grains of the bromides to the gallon which are present could not be looked for.

Although I have no faith in the power of promoting absorption which is ascribed to waters because they contain minute quantities of the iodides or bromides, yet seeing the immense popularity of Kreuznach, Ischl, and various other salt springs in the treatment of many of the complaints of females, it is a pity that some of our stronger brine springs have not been more used. It is, indeed, admitted by dispassionate judges, that the treatment at such places never really diminished a fibrous tumour, and, like all other treatment, fails to produce the absorption of an ovarian cyst ; but it is at the same time admitted, that it has often been of use in improving the general condition of the uterine system, and has given relief to the secondary symptoms produced by such affections.

I believe there is only one place in England where the

concentrated salt baths so popular in Germany can be had, and this is the rather dull, old-fashioned town of *Droitwich*. Unfortunately there is nothing in the place or its neighbourhood that is attractive; otherwise all the effects produced at Kreuznach, Ischl, and Reichenhall by strong salt baths could be easily obtained here; indeed none of those places have such strong brine springs.

An average salt bath may contain 2,000 to 2,400 grains of salt in the gallon, but the *Droitwich* water is represented as being about eight times as strong. There may, perhaps, be some over-statement in this, but the following account given by a gentleman who has recently bathed there attests sufficiently their concentration. He writes to me that "the baths are not first-class, but the bathing is most luxurious. So deeply impregnated with salt, that I half realized a visit to the Dead Sea. I could not sink, and only kept in the bath by putting two bricks of about fourteen or twenty pounds each on my chest and feet. The bath had a pleasant sparkling feeling."

But the most remarkable salt well in England is that of *Redruth* in Cornwall. It issues from a depth of 230 fathoms; it is of the temperature of 122° Fahrenheit, and, according to Professor W. A. Miller's analysis, contains in the gallon:—

	Grains,
Chloride of Potass	148.4
„ Lithia	26.05
„ Soda	363.61
„ Magnesia	8.86
„ Lime	215.17
Sulphate of Lime	12.27
Silicic Acid	3.65
Total	645.45, with 8.91 in. of gases.

This well, therefore, contains four times as much lithia as the strongest well of it hitherto known, and it is so abundant that it yields nearly 900 lbs. in the twenty-four hours.

In rather more than 2½ pints of water you could administer to a patient 8½ grains of lithia, with 215 grains of other salts. In 4 pints of the *Murquelle* at Baden, the strongest lithia well hitherto known, a patient gets about 9½ grains of lithia with 88 grains of other salts.

ON THE THEORY OF COUNTER-IRRITATION.

BY DR. ANSTIE.

IF ever the course of a scientific discussion justified those who inaugurated it, I think it must be allowed that the controversy stirred up by Dr. Dickinson and myself, in the course of last year, upon the subject of counter-irritation, has justified us in commencing it. It has been shown that there is no clear understanding, among the orthodox upholders of the practice, either as to the agents which may rightly be called counter-irritants, as to the circumstances in which they should be used, or as to the method of their operation. For my own part, I have been fairly startled—prepared as I was for a good deal of discrepancy in the arguments by which our sceptical objections to the popular theory and practice would be met—by the wide divergence of views that is now shown to have been all along concealed under the external appearance of agreement in the orthodoxy part. And I have no doubt that Dr. Dickinson, no less than myself, esteems it one of the most fortunate results of the discussion, that we have succeeded in eliciting so logical an analysis of the question, from the conservative side, as has now been contributed by Dr. James Ross ; whose previous writings on the subject had failed to attract as much attention as they deserved. Dr. Ross is a firm believer in some of the traditional virtues of counter-irritants which have been most strongly impugned by Dr. Dickinson and myself. But he has drawn a clear distinction between the clinical facts, which are capable of different explanations, and the theories which by the older schools of medicine were assumed as necessary to account for them ; and he has shown that these theories are inconsistent with each other, and must be superseded by something more in accordance with modern principles of scientific reasoning. Whether he has succeeded in supplying

this desideratum is another matter, which will form one of the topics for discussion in the present paper.

For many years past I have felt profoundly dissatisfied with the results of the routine use of the agents most commonly included under the phrase "counter-irritants;" and still more dissatisfied, if possible, with the theories upon which that practice appeared to rest. In the first place, it appeared to me that such an enormous aggregate of suffering was inflicted upon patients, by the use, more especially, of blisters, as could only be justified by very stringent evidence of its high utility. Secondly, I had observed a large number of cases in which a homœopathic or some other indifferent treatment had been followed by equally good or better results, in inflammatory diseases, than were obtained by even the most sedulous use of counter-irritation. And thirdly, I could come to no other opinion, after the best study which I could give to the orthodox theories of counter-irritation, than this: that at bottom they rest on no better foundation than a kind of general idea—perfectly metaphysical in its origin—that *what hurts one tissue or organ must benefit the neighbouring structures*. I by no means expected, however, to find that nothing could be said on behalf of counter-irritation; indeed I presumed that the rude scepticism of my assault would probably provoke a severe retort from some of the distinguished representatives of conservative ideas in medicine, and I was by no means sure that that answer might not be a complete extinguisher. Under these circumstances it was a considerable comfort to me to find that Dr. Dickinson (whose first paper, published before my own, I had not seen till mine was nearly written) had been thinking, with even more audacious scepticism than my own, on the subject of counter-irritation. There is, however, an important difference between my own position and that of Dr. Dickinson, and that of Dr. Dauvergne, whose paper (reprinted in this journal from the *Bulletin de Théraputique*) represents the extreme of opposition to the use of blisters. Both these latter authors appear to dispute the likelihood, if not the possibility, of any effect being produced on a local disease so far removed from the part to which we apply counter-irritation as an inflamed lung, for instance, is from the skin to which blisters are so commonly applied for its relief. I, on the contrary, do

not absolutely deny that any influence may be exerted on organs thus far removed from the site of "counter-irritation," or that this effect may occasionally prove beneficial. What I do dispute is, that there is any such certainty in the method as to justify our employing it, except in cases where the part "irritated" and the organ intended to be acted on are in recognizable communication with each other through the medium of the nervous system, and in a mode strictly limited to the production of merely *stimulant effects*. I have spoken of the hope that we can control inflammations of the lung or the bowel by blisters, &c., as "ludicrous;" but it must be well understood that the ridicule is intended to attach, not to the idea that such an influence may be physiologically *possible*, but simply to the notion that we can *direct it and graduate it at will*, while taking no further precaution for the purpose than that of simply placing the blister on a part of the skin *opposite* to the organ we wish to reach. That idea seemed to me, and it seems still, both ridiculous in a scientific and disastrous in a practical point of view. And, as a final justification against the imputation of an undiscriminating hostility to the use of what is called counter-irritation, I may recall the fact, that my paper in the *Lancet* was specifically directed against the "*popular idea of*" that practice. That paper was read before the Medical Society of London, and in the very lively discussion which followed a sufficiently accurate foreshadowing was given of the confusion, both as to theory and rules of practice, which the more formal essays published on the other side have since shown to exist among the ranks of the upholders of the frequent use of counter-irritants.

The argument propounded by Dr. James Ross stands so clearly apart from those advanced by any others of the recent defenders of counter-irritation as a practice generally applicable on the large scale to the treatment of disease, that it must be reserved for separate discussion. The only feature which it possesses in common with the hostile commentaries on my original paper which were made by speakers at the Medical Society, by a reviewer in the *Dublin Quarterly*,¹ and by Dr. J. Risdon Bennett in his very able paper in the *Practitioner* of June 1869, is the

¹ Dublin Quarterly Review, July 1869.

small account which it takes of the positive suffering inflicted by the severer forms of counter-irritation (which are those most commonly employed), and of the very real dangers to health, and even life, which they unquestionably involve. Upon this point, I cannot help criticising, with some severity, every section of the party which upholds the frequent use of these agents. I do not know whether either Dr. Bennett or Dr. Ross have ever personally endured the infliction of a blister, kept open for a week or so, but I have; and I can speak to the fact of its entailing an amount of pain and inconvenience to which no patient ought to be subjected except for very good reasons. But the matter is far more serious in regard to the effects of this treatment, when recklessly applied to children and delicate women. Even if we grant that Dr. Bennett is justified in dismissing, as a mere "bogie," the suggestion of Dr. Dickinson that infective processes may be set up by the artificial wound, it is none the less true that delicate children with broncho-pneumonia may be killed with a single blister, and that weakly subjects of post-partum peritonitis may be easily extinguished by the zealous use of the turpentine stupe: yet who that has made acquaintance with average practice will deny that numbers of medical men still lean with blind dependence upon such remedies in such cases? They are the refuge of the destitute, the one haven that seems open in stress of dirty weather!

Let us now examine the counter-irritation theories of the orthodox, expressly excluding Dr. Ross from that respectable company. Those who accuse young medicine of wanton heresy in this matter seem to think that the old system was self-consistent, and was merely the practical working out of a principle which equally holds good under the ancient and the modern physiology. I think it is not difficult to disprove this idea. There are, in fact, two main theories which have been vaguely held at various times; now one, and then the other predominating in the minds of the adherents of counter-irritation; namely, the theories of *depletion* (in a mainly mechanical sense) and of *derivation* or *reculsion*, which was for the most part a vitalistic and ontological idea. The first of these is that adopted by Dr. J. R. Bennett in his able article above mentioned, and I must confess that it appears to me to offer the only respectable defence that

can be adduced for the commonest of all uses of counter-irritation : viz. the employment of a severe skin-irritation to relieve a deeper organ embarrassed with acute inflammation. It rests on the maxim, *Ubi irritatio, ibi fluxus*, and presumes that the congestion produced by irritating the skin implies the withdrawal of so much blood from the part which is unduly engorged. Taken in this sense "counter-irritation" includes, of course, not merely blisters, turpentine stupes, mustard plasters, and other *painful* applications to the skin, but also mere hot fomentations, and all other means by which the skin can be artificially congested. I shall not stop here to scrutinize the clinical facts upon which Dr. Bennett and those who think with him rely for proof that such external remedies do reduce the congestion of deep-seated organs, and thus lessen inflammatory processes, hasten absorption, &c. That criticism must be deferred to a future paper. But granting for a moment the therapeutic fact, and granting to the full that hot fomentations, equally with blisters, have the power to produce more or less considerable skin-engorgement, I have to ask a further question :—How can you assure us that the only common property of blisters and fomentations, in virtue of which they can be supposed to relieve the congestion of distant organs, is that of congesting the skin? It is at least abundantly conceivable that the effective common property is that of stimulating the peripheral nerves and (by reflex action) the vaso-motor nerves of the distant organ. On the other hand, there exists one well-known and most powerful objection to the depletion theory, namely, the enormous difficulty of supposing that the depletive action would be exerted to any greater extent upon the inflamed organ than upon the remainder of the circulation ; while, unless this were the case, it is impossible to understand how the depletion actually exerted on the organ we desire to reach could be sufficient to cause any appreciable relief from mechanical pressure. Let us try to realize the facts, approximatively. We will suppose that a pneumonic lung, in the stage of red hepatization, contains from six to eight ounces more blood than usual—surely not an extravagant hypothesis. We will assume that by the application of a blister, six inches square, we are able to at once overfill the vessels of the skin to the extent of three or four ounces, and

during the ensuing twenty-four hours to extract one ounce of serum from them—assuredly a liberal computation. What follows? why, that we withdraw from the aorta and vena cava the above-named bulk of blood, scarcely any of which will come directly from the inflamed lung, the quantity of blood in which will therefore practically be only diminished in the degree of its proportion to the general mass of circulating fluid. But even this gives too flattering an estimate of the effect likely to be produced; since the paralytic dilatation of the vessels of the inflamed organ may only too probably persist, in which case one must suppose that the part would quickly re-acquire its exaggerated complement of blood under the necessary conditions of mechanical pressure within the chest.

Such are the difficulties of the depletion theory at one end of the scale, in the case, namely, where the inflamed organ is anatomically so remote that no direct relation can be traced between its vessels and those of the skin which we irritate. A precisely opposite difficulty occurs where the organ which we aim to affect is very near, and pretty closely connected (vascularly) with the skin on which we act: here we may indeed affect the inflamed organ, and that very powerfully; but how can we assure ourselves that the paralytic dilatation induced in the skin-vessels will limit itself accurately to them, and may not extend to and aggravate the condition of the deeper vessels? Doubtless we may figure to ourselves a kind of typical case, in which an irritant, acting upon skin supplied by vessels connected with the vascular network of the diseased organ, shall be just far enough from the latter, and mild enough in operation, to affect *only* the skin-vessels, converting them into dilated reservoirs into which the blood from the engorged part may overflow. And upon the depletion theory this class of cases, one would suppose, must include all the instances in which counter-irritation is useful. But it would then altogether fail to explain the asserted benefits of the treatment in pneumonia, or in affections of the ovaries, &c.

The other principal theory on which the routine use of counter-irritation has been defended is that of “superseding one morbid action by another,” which Dr. Dickinson believes to be “at the bottom” of the practice. I believe that

to the largest extent this has been, and still is, the case; and I regret the fact, for it is not creditable to the philosophic education of the profession. The theory really is a "relic of notions belonging to times which were antecedent to the birth of scientific physiology:" and (*pace* Dr. Bennett) I must repeat my conviction that it is still the "leading idea of counter-irritation" for very many practitioners. It is of little use to contend that the mass of practical physicians and surgeons are quite guiltless of any predilections for mystical or metaphysical methods of reasoning about medicine; the fact is, that they inherit from their predecessors a traditional language and traditional forms of thought which unconsciously fetter them to a far greater degree than they are aware of. Nay, more, I cannot help remarking that even Dr. Bennett, though he takes, on the whole, what seems to me the far more scientific standpoint of the *depletion* theory, has still a lingering tendency towards the *substitution* theory. He quotes the *metastases* of disease, in illustration of the possibility that counter-irritation may produce effects at long distances; and he makes the same strange application of Hippocrates' maxim (that when two pains occur at once, in different parts of the body, the greater will annihilate the other), which was a fruitful source of confusion in the speculations of mediæval physicians. Dr. Dauvergne (with much of whose paper I am obliged to disagree) has well exposed the fallacy of applying the above maxim to the case of inflammations. "Pains," he says, "are not inflammations, nor even congestions, and to obscure or mask a thing is not to divert or to destroy it. Yes, the old man of Cos was right when he said that a stronger pain can mask a weaker, but he was talking of a phenomenon of sensation." To me it seems clear that no inference can logically be drawn from the one case to the other, except on the basis of exploded vitalistic theories, which regarded disease as a distinct and hostile entity, whose assaults upon the organism were represented by the voluntary action of a vital spirit. And surely, the whole idea of "metastasis" is nothing more than a relic of the same school of thought. Even in the case of the so-called migrations of gout, there is nothing which truly deserves the name of metastasis, for the gouty taint equally

pervades the whole organism, even at the moment when its inflammatory manifestations cease at one spot and commence at another. But to apply the general principle of substitution to the artificial treatment of the numerous inflammations which depend upon fixed morbid deposits or mechanical mischief, as is constantly done, *e.g.*, in the case of pneumonia depending on heart disease, or meningitis depending on tubercle, seems to me, as it does to Dr. Dickinson, entirely unreasonable; nor do I believe that it would ever be done by one who had fairly shaken himself free of the ontological view of disease, which is still copiously represented in our medical language by such luckless phrases as "elimination," and the like.

But it is time to turn to the consideration of Dr. Ross's theory, which differs essentially in character from both of those which have been noticed. In the first place, Dr. Ross is neither consciously nor unconsciously a vitalist. He does not regard disease as an entity, to be hustled or coaxed out of the body by force or pious fraud, and he therefore naturally rejects the substitution theory. Next, he refuses to admit the depletion theory, on the double ground that the machinery of relief which it assumes is neither demonstrable nor apparently possible, and that mere depletion would not account for the clinical facts. He draws out a series of "empirical laws" which are a rough, but, as he thinks, sufficient representation of the main clinical facts; and these laws sufficiently agree with the proposition which he puts forward as a "main intermediate proposition between the theory and the practice of counter-irritation," viz. that irritation of one part of the body tends to stimulate the textures in its vicinity. Finally, he propounds the theory that counter-irritants exert an influence, always *stimulative* and not *depressing* in *tendency*, and that this influence is exerted, for the most part, not through blood-vessels, nerves, or any special structures, but through *continuous, and also through contiguous, parenchyma*. I shall not at present revert to the discussion of Dr. Ross's empirical laws, because that subject belongs to the domain of clinical observation, and I must confine my present remarks to matters of physiological theory, reserving to a future

occasion the criticism of the clinical evidence which has been adduced.

I am anxious, at present, to conclude the history of the theoretical part of the recent discussion by explaining the hypothesis put forward by myself, which is as follows. 1. It can hardly be doubted that if so-called counter-irritants are to do any good in the *early pyrexial* stages of inflammations, they must do so by the exercise of an influence which contracts the arterioles, thus heightening the arterial blood-pressure and relieving the stress on the capillaries. 2. But all experimental evidence goes to show that *strong* irritation (strong, *i.e.*, either from the virulence of the agent, or the directness with which it is applied to the suffering part) tends to produce, not contraction—or this only momentarily—but paralytic dilatation of the arterioles, and passive overfilling of the capillary web. 3. Hence it would appear that if the more powerful stimulants ever do good in the acute stages of inflammation, it can only be when they are applied at such a distance that their influence falls very gently, and much diluted, on the part aimed at. 4. It would seem probable that the effects of milder skin-stimulants would be equalised with those of *irritants*, on the condition that they were applied nearer to the engorged organ, or to a larger surface of the skin; in either case the *quantity* of the influence would make up for the lack of *intensity*.

As far, then, as regards the possible benefits of skin-excitation on the *early stage of acute* inflammations of distant organs and tissues, my theory considers that all these efforts are produced by a *stimulative* action on the *vessels* of the diseased part.

5. The case of *chronic* inflammations, with no or with little pyrexia, was not sufficiently dealt with in my former paper, owing to limited space. Dr. Ross has truly remarked that the tendency of modern practice is, on the whole, towards restricting the use of counter-irritation to the treatment of the chronic forms and stages of inflammation. He points out that in the pathological stage which succeeds to that of acute pyrexia and constantly increasing engorgement, the inflamed part is the scene of abundant vital movement (cell-growth, proliferation, &c.), which, however, is of a low type. It is upon this, he

thinks, that the stimulating influence of counter-irritation acts with good effect; it substitutes for this profuse but debased activity a more restrained but higher type of formative action. I now beg to say that so far as counter-irritants can do good in this stage of inflammatory diseases, my theory is identical with that of Dr. Ross as to the effect produced, the only question left open is that of the channel of the influence. On that point, as will be seen directly, I do not agree with him.

6. The case of *neuralgic* affections appears to me to throw direct light on the *modus operandi* of counter-irritants in inflammatory diseases. The remarkable utility of blisters in neuralgia is a long-established fact; but my own observations lead me to think that these remedies as frequently do harm as good, from a wrong mode of application. I have repeatedly found that blisters applied directly to the site of the pain if anything *aggravate* the suffering; but, on the other hand, if they are applied to a posterior branch of the spinal nerve-trunk from which the painful nerve issues, a reflex effect is often produced of the most beneficial character. For example, a blister applied over the *posterior* branches of the intercostal nerves is a powerful remedy for pain situated in the course of anterior branches towards the front of the chest. Were *pain* the only symptom relieved in this manner, however, the argument would be incomplete. But it happens, in some cases of inveterate neuralgia, that inflammatory affections are secondarily produced around the points of greatest pain; and these secondary inflammations are remarkably benefited by the application of blisters in such a situation that they can only act in the reflex manner above indicated. Here, then, is a case in which one can identify the path of the noxious influence, and also the path of the therapeutic influence which successfully opposes it. It appears that the functional condition of the sensory nerve-centre, which corresponds to pain at the periphery of the sensory nerve, can extend its influence to the associated vaso-motor nerve-centres, and finally issue in paralysis of vaso-motor fibres going to the vessels of the painful part. Hence local congestion, hypersecretion, or altered secretion of glands in that neighbourhood, &c. This state of things, it seems, can be remedied by a stimulant influence falling upon the sensory nerve-centre through the

channel of centripetal fibres, which have no connexion with the inflamed part except through the centre, but yet have a very clear and definite connexion with it *by that route*. I cannot but think that we have here most pregnant suggestions towards a reasonable theory of counter-irritation as a remedial agent in inflammatory affections. I have never denied for an instant that the transmission of an influence from the skin to distant organs is possible; but I insist upon two things. First, that unless we can proportion the force of the skin irritation to the vital status of the part to be acted on, we are as likely as not to produce an effect exactly opposite to what we intended; and secondly, that we ought to have some guarantee for the influence being limited in incidence to the affected part at which we aim it. And it seems probable that by reflex stimulation applied to a physiologically distant tract of skin, which is nevertheless in direct communication with the centre on which depend the vaso-motor and also (if, as seems probable, they have an independent existence) the *trophic* nerves of the affected organ, we at once secure the necessary *dilution* of the influence, and an intelligible *path for its transmission* to the diseased part, and to that alone.

7. Dr. Ross limits the beneficial action to the secondary stages of the disease; but it appears to me that whatever good may be produced at this stage through the reinforcement, or (as he would call it) alteration in type, of the tissue-force, may be equally expected in a state of mere inflammatory engorgement by appropriate stimulation of the vaso-motor system of the affected part. And as regards the channel by which the influence is to be conveyed, I have to object to Dr. Ross's theory of the transmission, through continuous and also through contiguous parenchyma, of the stimulant action, that although it is not impossible that a stimulant influence may be thus transmitted independently of the nervous system, it is most improbable that upon the common plan of merely applying irritation to a large surface of skin that happens to be *opposite* the inflamed organ, any precision of effects can be attained. If, for instance, we attack with our blister some five or six inches square of the skin covering the chest of a pneumonic patient, it is impossible for us to be sure that in attempting to produce a beneficial stimulant action on the lung

beneath we shall not gratuitously involve six inches square of previously healthy costal pleura in an *inflammation*, which may be by no means trivial in its effect upon the final issue of the case. And it seems to me that this is a serious objection to the theory of Dr. Ross so far as it applies to the use of blisters or other strong irritants to the skin of the chest or the belly with a view of influencing inflammatory processes in the lung or bowel. In short, if the influence of blisters *does* "traverse the body in straight lines, like bayonet thrusts," to use Dr. Dickinson's somewhat derisive phrase, it would seem to be an uncommonly dangerous and unmanageable influence: and it is difficult to see how it could be employed with advantage in practice. Whereas, if it travels only by the paths of reflex nervous action, there is no reason to think that (unless applied on an enormous scale) it would exert any vitally depressing effect on organs so anatomically remote, and the only question would be whether it was not purely indifferent; a view to which I on the whole incline in the case of organs so situated as the lung and the bowel are.

I cannot conclude this already too lengthened estimate of the present position of the theory of so-called counter-irritation without suggesting the alterations in nomenclature which seem to me to be necessitated by our improved physiological and pathological knowledge. I am decidedly of opinion that the word counter-irritation should be altogether banished from our phraseology. "Distant stimulation," or some equivalent phrase, would properly express the effects of blisters, stupes, mustard plasters, and moist heat. The actual cauterity probably acts simply by *destroying* a certain quantity of sensitive tissue, and has consequently no real relationship to agents of this class. The only case in which we should retain the phrase irritant, is that in which we deliberately excite or increase inflammation, sacrificing the welfare of a comparatively unimportant tissue or organ to higher vital interests; as, *e.g.*, when we inject an irritant fluid into a serous sac, in order to promote adhesion of its walls.

Reviews.

On the Connexion between Chemical Constitution and Physiological Action. Part II.: *On the Physiological Action of the Ammonium Bases, derived from Atropia and Conia.* By Dr. A. CRUM-BROWN and Dr. THOMAS R. FRASER. Edinburgh: Neill and Co. (Reprint from the *Transactions of the Royal Society of Edinburgh.*)

THE researches which Drs. Crum-Brown and Fraser have been conducting for some time are among the most important for therapeutics which have ever been undertaken, although at present they have not been carried far enough to be available in practical medicine. We have already noticed the first part of these investigations, which revealed the remarkable modification of the physiological action of *strychnia*, which are observed in the effects of its *ethyl* and *methyl* derivations; and we have now much pleasure in calling attention to the equally interesting results which have been obtained by a physiological comparison of *atropia* and *conia* with their respective ammonium bases.

It has been amply proved by experiment that atropia (which is nothing like so active a poison to dogs or rabbits as it is to men) causes not merely paralysis, but spasms, partly of a clonic and partly of a tetanic character, with exaggeration of reflex excitability. It is therefore a particularly interesting fact, now discovered, that the compound of *iodide of methyl* with atropia at once greatly increases the lethal activity of the poison, and at the same time prevents the occurrence of the spasms; and that the same effects are produced by the *sulphate* of methyl-atropium. On further analysis of the change thus produced in the action of the alkaloid, it appears that whereas atropia produces its paralyzing effect upon the motor nerves, the sensory nerves, and also on the cord itself, the methyl compounds only paralyse the motor nerves; they produce this paralytic effect at the peripheral nerve-terminals, in the same way as atropia itself. It is very remarkable that so energetically fatal an effect should be produced by substances with such a limited sphere of action as is possessed by these ammonium bases of atropia.

The researches on conia and its ammonium bases bring out a similarly valuable series of facts. In the first place, it appears that two varieties of conia exist (Morson's and Christison's),

which differ greatly from each other, both as to lethal activity and in mode of action. The nature of the difference in mode of action is explained by the results obtained in researches with methyl conium. The hydrochlorate of this substance was greatly more lethal than the (Morson's) conia from which it was prepared ; it paralyses the motor nerves and the spinal cord, and produces death with about the same rapidity as Christison's conia, but it does not show so much preponderating power over the motor nerves as that substance exerts. Morson's conia usually produces complete paralysis of the motor nerves before complete paralysis of the reflex function of the cord when the dose is small, but exactly the reverse order of events when the dose is large. Methyl conia exactly inverts the respective effects of small and large doses. The general result of experimentation is to prove that Morson's conia is in fact a preparation containing an admixture of methyl conia ; hence its greater power over the motor nerves. Normal conia, the authors think, should be devoid of any spinal action. The smaller lethal activity of Morson's preparation, however, cannot be explained in this way ; it may perhaps be due to the presence of ammonia. A further series of researches was made with the iodide of dimethyl conia, and this substance was found much less active than either conia or methyl conia, and to be entirely devoid of spasmodic and spinal paralysing actions.

We have no space for any further analysis of these very interesting researches, but in recommending them to the notice of our readers, we must again call attention to their great suggestiveness. A perfectly new field of inquiry is opened before us, and we beg especially to remark on the unexpected nature of the facts already revealed. How could we anticipate, for instance, that the addition of such substances as methyl or ethyl to a powerfully poisonous alkaloid like atropia would eliminate all the convulsive and tetanising force of the latter ; and even if we could suppose that, how could we suppose that the lethal activity of the alkaloid would be simultaneously increased to a very great extent ? Take, again, the very curious observations on the relative effects of large and of small doses of atropia, and on the exact reversal of their relations in the case of large and small doses of methyl atropia. In these remarkable facts we have the strongest possible warning against two kinds of hasty generalisation which are only too common ; viz., the assumption of *complete* antagonism between the toxic forces of drugs, which are capable of opposing each other's action in certain striking particulars, and the assumption that small doses of a drug must produce effects, which are a faithful reproduction, in miniature, of the action of large poisonous ones.

We shall look forward with the greatest interest to the con-

tinuance of these valuable labours of Drs. Crum-Brown and Fraser, as also of the separate researches of the latter gentleman on antagonism.

Des Effets physiologiques et thérapeutiques de l'Hydrate de Chloral.

Par E. BOUCHUT, Médecin de l'Hôpital des Enfants Malades,
&c. &c. Paris : J. B. Baillière et Fils. 1869. 1s.

THIS pamphlet is one of a crowd of publications which have lately appeared on chloral hydrate : and we merely notice it here, instead of waiting to include it in a general article on the subject which we shall shortly publish, because in one or two particulars mentioned by M. Bouchut we can check his statements from observations which were made independently by ourselves.

It was somewhat of a misfortune that the first introduction of chloral was nominally in the character of an anæsthetic, since not only did it fail to fulfil the anticipations about it in this respect, but a wrong idea was set afloat of the character of its action ; viz., that it produced a heavy and narcotic sleep. The fact is the very reverse of this, and we believe that the explanation of it is to be found in certain physiological consequences of its action which we are now about to mention.

M. Bouchut rightly observes, that the action of chloral does not commence till from twenty to forty-five minutes after administration. He proceeds, however, to speak of symptoms of an intoxicative nature ushering in the chloral sleep, or ensuing on the awaking from it ; and this is so contrary to our own experience, that we can only refer it to the magnitude of the doses employed by him, and which we believe to be excessive, unnecessary, and not without danger. He gives from 15 to 30 grains to a young child, and from 45 to 75 grains for an adult, and says that these doses may be repeated, even several times within the twenty-four hours. We must say that we doubt if such doses are justifiable. Even with adults, the largest quantity that we have found it necessary to give for hypnotic purposes, even to an adult, has been 60 grains in two doses, at an hour's interval from each other, the first having failed to produce the required effect : and although M. Bouchut's experience includes a very considerable number of cases, we must remark that it would require a very large number of instances of impunity, under such doses as he recommends, to reassure us as to their use, in presence of a single fact like that recorded by Dr. Reynolds at page 188 of the present number of this journal.

It is interesting to note that the sphygmographic observations made by M. Bouchut confirm those which had been independently made by ourselves with the kind and skilful assistance

of Dr. Burdon-Sanderson. The effect of a single thirty grain dose was to throw us, without any symptom of cerebral inconvenience, into a light and gentle sleep, about three quarters of an hour after taking it; and the sphygmographic tracings indicated an unmistakable elevation of arterial pressure, which became considerable during the period of actual sleep. M. Bouchut confirms the fact of this elevation of arterial pressure, and mentions the occurrence, also observed by ourselves, of a perceptible chilliness and dryness of skin of the extremities. It seems plain, both from these observations, taken together with the case of chloral poisoning mentioned by Dr. Reynolds, that chloral contracts the arterioles, and that in poisonous doses it carries this action to the extent of strong spasmodic contraction. It would appear highly probable that its hypnotic action is produced entirely through its causing a certain degree of arterial anæmia of the brain; but if this be the case, it can hardly be desirable to push it in very large doses. M. Bouchut himself considers chloral contra-indicated in cases of organic cerebral and cardiac mischief; and we are so far inclined to agree with him, that we should have much fear of the possible results of very large doses in cases of fatty or otherwise weak heart. We can hardly doubt that the mischief in Dr. Reynolds's case arose from the effect on a rather weak heart of a too pronounced enfeeblement of brain function from arterial anæmia.

As regards the effect of chloral in relieving *pain*, especially such severe pain as that of cancer, and of hip joint disease, we are sorry to say that our own experience is by no means so favourable as that of M. Bouchut, but perhaps this is partly due to our employing less heroic doses, a precaution for which we think we have shown good reasons. Very interesting indeed are M. Bouchut's experiences of the drug in violent chorea; and certainly it ought at once to be tried on the large scale for this purpose. We also think that his suggestion of its probable benefits in relieving the suffering of labour, and in cutting short puerperal convulsions, is likely to prove highly valuable. But on these and other points in connexion with chloral we hope shortly to lay a considerable bulk of experience before the readers of this journal.

Lectures on Food. Delivered before the Society of Arts. By H. LETHEBY, M.B., M.A., Ph.D., &c. London: Longmans. 1870. Pp. 275.

THE work before us is scarcely entitled to be considered a complete scientific treatise on its important subject; yet it may certainly be pronounced both useful and opportune at the present moment, when the all-important questions of food-economy are

attracting so much attention. Dr. Letheby presents us with a very valuable collection of facts, popularised in such a manner as to be generally intelligible, and yet sufficiently detailed and accurate in statement to serve many valuable purposes, not only for the public, but for the guidance of medical practitioners. It cannot be said, however, to represent more than a convenient compilation of knowledge which is already familiar to those who have worked at food questions; and it is curiously representative, wherever it deals with any of the more important disputed topics in the physiology of food, of the unsatisfactory and transitional stage of dietetic science which at present exists. One cannot but remark, for instance, that although Dr. Letheby in several places intimates a tolerably strong conviction that the main physiological want of the organism is *carbonaceous* matter for the generation of heat, he cannot shake himself free of the use of such terms as "plastic" food, which represent the older theory of Liebig, which assumed that nitrogenous matters were the basis of tissue-repair and muscular power. Upon the very important topic of the alimentary value of alcohol, also, his trumpet speaks with an uncertainty of sound which seems to proceed not merely from hesitation between evenly balanced authority, but from inadequate knowledge of what has been done in recent years. It is certainly rather late in the day to speak of the researches of Lallemand and of Dr. Edward Smith as "proving" that a large proportion of the alcohol ingested passes through the body without transformation; and the author ought to know that Dr. Thudichum's contrary conclusion is not his alone, but is supported by the observations of both earlier and more recent inquirers, which have in fact demolished the theory of copious elimination of unchanged alcohol.

Notwithstanding these and other defects, however, the book deals with a large number of pressing questions upon which the public urgently requires information, and deals with them in a practical way, which will be found very useful. We are not personally among the enthusiastic admirers of the author's previous writings on questions of food; and we deprecate strongly the apparently personal feeling which he has imported into some of his controversial writings on these topics; but we are bound to say that the present book is sufficiently neutral in tone. We may add that the literary style of it is good, and that the story flows on evenly enough to avoid the unpardonable fault in a work of popular science, of seeming dry and indigestible.

[We regret that pressure on our space obliges us to postpone notices of Professor Binz's work on Therapeutics (2d edit.), and of several other very interesting books.]

Clinic of the Month.

On anointing in Infantile Disorders.—Dr. Knaggs states that for some time past he has been testing with uniformly successful results the value of a very simple method of treating such infantile complaints as atrophy, bronchitis, convulsions, diarrhoea, febrile disturbances generally, and indeed all disorders of childhood which are accompanied by an unnatural state of the skin. The treatment simply consists in smearing with salad oil the whole surface of the body, from the crown of the head to the tips of the fingers and toes; the process being repeated every twelve, six, or even four hours, according to the urgency of the case. Of course the use of a long flannel gown or small blanket is obvious, and the fluid should be slightly warmed. The application of oil possesses the following immense advantages over the ordinary warm bath. 1. Skin action is more completely and permanently restored. 2. The danger of reaction is avoided, for there is no sudden change of temperature; and moreover the sheet of oil protects the surface from atmospheric influences. 3. It acts as a fuel food, not only preventing waste of tissue, but actually increasing the bulk of the little patient. 4. It does not depress, but, on the contrary, appears to exhilarate. Dr. Knaggs gives some remarkable instances of benefit derived from this mode of treatment, and remarks "that it will scarcely be credited by many that the formidable affections above mentioned will frequently yield to this treatment, or at any rate show signs of abatement, in from twenty minutes to four-and-twenty hours, but such is the case; though sometimes forty-eight or even seventy-two hours will elapse before any decided signs of improvement occur. . . . Did I not confine these notes to infantile disorders, a long string of other complaints, which are to be benefited or cured by oiling, might be added. It seems as though the good old Greek and Roman practice will have to come up again." (See *Lancet*, Jan. 22, 1870.)

Chloral in Acute Mania.—Dr. Crawford relates a case of acute mania, occurring in a woman aged 56, who had had two previous attacks. Upon these two occasions sleep was almost an impossibility, various medicines having been tried without

any apparent advantage. On the present occasion she had been ill for five weeks when Dr. Crawford saw her, and the daughter stated she had not slept for five minutes at any one time. Large doses of opium and morphia had been given, but they seemed to make her even more talkative and restless. Her appetite was ravenous. Purgative medicines had been repeatedly ordered to counteract the constipating effects of the opium. Her pulse was 130, and her skin hot. She was now ordered twenty-five grains of hydrate of chloral in two ounces of water at bed-time, for three consecutive nights, with excellent effects. The first night she did not sleep much, but the talking was entirely stopped. The second night she slept for nearly nine hours perfectly soundly and tranquilly, and even during the following day she had several hours of refreshing sleep. On the third night she was equally quiet, with as much sleep; and on the following day said she was improved, and did not require any more of the medicine that made her so sleepy. Immediately after the first dose the pulse began to fall, until at the end of the third day it had fallen to 90, the temperature at the same time becoming natural. She did not complain of nausea, headache, or any other unpleasant feeling during the time she was taking it. Since that time she has remained perfectly well. (See *Medical Times and Gazette*, Jan. 22, 1870.)

Petroleum as an Antiseptic.—Dr. Fayrer records a series of cases in which he has experienced the advantage of petroleum or earth oil in the treatment of wounds. The kind of oil used was a dark oily-looking fluid, with a peculiar though not unpleasant aromatic odour. It is largely obtained in India, Burmah, and Assam. He has used it undiluted, or diluted with equal parts of oil or glycerine. It limits suppuration, and has some deodorising power, and is a useful stimulating and detergent application in sloughing and ulcerated surfaces, and in one case of carbuncle proved most efficacious as an external application. It is but slightly irritating to raw surfaces. (*Ibid.*)

Urethral Stricture treated with Laminaria Dilators.—Mr. Reeves has been for some time past engaged in the attempt to supply a mode of dilating strictures of the urethra by laminaria, free from the unpleasant consequences which have hitherto attended the use of this agent. The old laminaria bougies had an unfortunate tendency to swell behind the stricture, rather than within it, and the surgeon was compelled to cut down upon the retained or broken bougie before the urethra could be cleared. In Mr. Reeves' instrument a short bit of laminaria is securely fastened to a small-sized catheter, in such a manner that the whole apparatus may be readily withdrawn when the

dilatation is completed. Several cases of the successful application of this mode of treatment are recorded. (See *Medical Times and Gazette*, Jan. 22, 1870.)

Treatment of Diarrhœa in Teething Children.—Dr. Kelly, of the Evelina Hospital, observes that in this form of diarrhœa, purgatives so useful in the diarrhœa arising from improper feeding are of little or no benefit. He considers it best to give a saline mixture for the first two or three days, because there is generally more or less febrile excitement, and then, if the purging continue, logwood and catechu with carbonate of soda or chalk. According to his experience, it does not often happen that sickness or distension of the abdomen follows the use of an astringent; on the contrary, the child seems easier and is less fretful. In many of these cases an alkali seems beneficial, and one part of lime-water may be mixed with three or four parts of milk, and given frequently during the day. (See *Lancet*, Jan. 22, 1870.)

Carbolic Acid in Carbuncle.—Dr. Purves describes the case of an old lady, aged 89, who suffered from an attack of this disease, and who had previously been in good health. She was in the first instance treated with emollient fomentations and poultices, applied to the inflamed spot, and the administration of quinine internally combined with rhubarb, and a mixture containing liquor of acetate of ammonia, and solution of muriate of morphia. No operative proceedings were at first adopted, but at a later stage the slough and the loose and undermined skin were removed with scissors. Then, in order to destroy the offensive effluvia arising from the corrupting mass, he applied, by means of a camel-hair brush, a mixture containing carbolic acid and glycerine, and continued this application after the core was detached, in order to stimulate the granulations to healthy action. The large, ugly, and gaping wound soon contracted, and the old lady made an excellent recovery. A little wine and a liberal allowance of animal food were allowed. Dr. Purves states that during a professional career of thirty years he has never had recourse to crucial incision, and all his cases have ended favourably. He considers it to be a secondary affection, and that its exciting cause is chronic digestive derangement. (Ibid. Jan. 29, 1870.)

The Administration of Chloroform.—Mr. Bader, the Ophthalmic Surgeon to Guy's Hospital, makes some important observations on the symptoms produced by chloroform and other anesthetics, and on the treatment to be pursued in cases where danger threatens. The inhaler employed by him is a simplified modification of Snow's. Attention, he observes, should be paid to the colour of the blood which flows; if this turn black sud-

denly the chloroform or methylene should be removed, and the patient when struggling should never be resisted. Out of a very large number of cases, amounting in all to 3,224, some, as might be expected, presented serious symptoms. Forty-five are reported as having become blue in the face, and stertorous suddenly, with the breathing and pulse irregular; whilst seven are stated to have become pale suddenly with respiration and pulse stopping (to several is affixed the remark, apparently dead). In all these cases the chloroform was removed at once, and the patient *slowly and gently turned on his left side*, to cause the region of the heart and the left side of the face to rest upon the couch. Whether the support given to the heart, or a change in the position of the tongue, or some other change, be the cause of the cessation of the dangerous symptoms, Mr. Bader states he is unable to say. The fact of rapid recovery of patients when placed on the left side when in danger was observed accidentally, and for the last six years it has been the sole means adopted in such cases. (See *British Medical Journal*, Jan. 29, 1870.)

Treatment of Post-partum Hæmorrhage.—Dr. Cripps Lawrence thus describes the practice pursued in the treatment of ordinary labour, and of labour followed by hæmorrhage, at Queen Charlotte's Hospital. The patient is delivered on her left side, the uterus during and after the birth being followed down with the left hand, while the perinæum is supported with the right. The funis is then tied and divided, the patient is directed to turn on her back, the limbs are straightened, and a binder is applied *at once, before* the expulsion of the placenta; the greatest pressure being brought to bear about the level of the fundus uteri. In the event of flooding, actual or imminent, the following plan is adopted. Five or six ordinary babies' diapers are rolled up tightly one within the other, so as to make a cylindrical pad about eight inches long. This is placed on the left side over the abdominal aorta and the uterus, which has first been "defined," if possible, by grasping it firmly. The binder is now carefully applied over the pad, and the patient is placed on her left side. In ordinary cases no ergot is given to a primipara, but each multipara takes from fifteen to thirty minims of the extractum ergotæ liquidum in water, immediately after the birth of the child, as a precautionary measure. Should the above measures fail, smart slapping of the nates and vulva with cloths wrung out of iced water, and applied over the pubes, ergot in half-drachm or drachm doses, and brandy if necessary, and ice inserted into the vagina, are resorted to. The essential principle here advocated in the treatment of post-partum hæmorrhage is the employment of more or less compression over the abdominal aorta and uterus before proceeding to further measures. Dr.

Lawrence also points out the advantages of this mode of treatment in cases of uterine inertia. (See *British Medical Journal*, Jan. 29, 1870.)

Intestinal Obstruction treated by Atropia.—Dr. Philipson, in a paper read before the Northumberland and Durham Medical Society, records an interesting case where this mode of treatment, advocated by Dr. Fleming, of Birmingham, proved successful. The patient was a Danish sea captain, 41 years of age, who after suffering much hardship from stress of weather, was suddenly attacked, on the afternoon of the 25th October, with pain and sensation of fulness in the left side of the abdomen. His bowels, when seen five days after the attack, had not been moved for nine days, and but scantily for a week before that time. Under medical advice he had taken an emetic two days before admission into the Newcastle Infirmary, and vomited freely four times. During the week previous to admission he also took various purgatives, and had seventeen injections administered without any result. The symptoms becoming urgent Dr. Philipson was summoned, and found him restless and apprehensive, with sharp pain in left hypochondrium, and general sensation of fulness in the abdomen. The pulse was 75, soft and regular; skin cool and perspiring; tongue moist and slightly furred; breath very offensive; abdomen uniformly distended and tympanitic. Firm pressure seemed rather to relieve the pain. No abdominal tumour or hernia; no evidence of disorder or disease about the rectum. Urine passed shortly after admission. From a general review of the symptoms the case was regarded as one of intestinal obstruction due to impacted faecal accumulation with muscular spasm. He was ordered half an ounce of castor-oil, to be placed an hour afterwards in a warm bath, and while in it to have a warm water injection. The castor-oil was vomited shortly after being taken, and the injection returned without effect. The next day, after a restless night, continuing to take the same view of the case, he was ordered, every three hours, sulphate of magnesia a drachm, diluted sulphuric acid ten minims, liquor of sulphate of atropine five minims (Ph. B.), tincture of orange peel a drachm, in an ounce of water. After the first dose he became easier, after the second passed flatus per rectum. At this time the pupils had become dilated. At 9 P.M., after the third dose, whilst in warm bath, and after warm injection, passed a small lump of hard dark faeces. Early on the following morning, eleven days after commencement of attack, passed a liquid motion, the symptoms of belladonna poisoning becoming tolerably well marked; the dose was therefore diminished to three minims, and on the night of the thirteenth day he passed a copious motion, lumpy, dark-coloured, almost

black, and very offensive. From this time no further difficulty in procuring evacuation of the bowels was experienced, and the atropia was discontinued after being employed for five days. Dr. Philipson considers that the most probable theory of the action of atropine in these cases is that it effects constriction of the smaller arteries, in consequence of which the supply of blood to the bowels is lessened, whereby the passive congestion is relieved, and healthy action promoted. Its action is distinguished from that of ordinary irritant purgatives in that it does not provoke increased secretion or peristaltic action of the canal above the obstruction, nor is its action followed by reaction or any disposition to constipation. (See *Medical Times and Gazette*, Jan. 29, 1870.)

Quinine in Acute Lumbago.—Dr. Glover directs attention to a mode of treatment of acute lumbago and other acute pains, generally supposed to be muscular, in the back and neck, which he has found to be singularly effective, though not described in books. Sir B. Brodie thought that in many cases of lumbago, where there was great inability to use the limbs, “the lower part of the spinal cord, or at any rate the nerves that arise from it,” are at fault. On this view he occasionally cupped and gave calomel and opium. It is doubtful, Dr. Glover thinks, whether all such cases are, in the proper sense of the word, cases of lumbago, and not rather cases of inflammation of the cord or its membranes. But the point he wishes to insist upon is that in the very acute cases of lumbago, in which the urine is clear of lithiæal deposits, there is a strong neurotic or neuralgic element in the case, the proper remedy for which is quinine, in two-grain doses, every four or six hours; and he has verified this opinion in several very acute cases, in which alkaline mixtures, opiates at night, opiate liniments, and other soothing local applications, had entirely failed. After referring to two or three cases in which this treatment was successfully adopted, Dr. Glover observes that it is not alone in lumbaginous pains that he has noticed this power of quinine, but also in acute pains of the cervical or scapular regions, in some cases more or less tender on pressure, but very painful on movement. (See *Lancet*, Feb. 5, 1870.)

Extracts from British and Foreign Journals.

Chromic Acid in the Treatment of Menorrhagia.—Dr. Wooster, of San Francisco, remarks that menorrhagia, like menstruation, occurs from the whole mucous lining of the womb, and is merely an excessive exosmosis or transudation of blood from the vessels into the mucous follicles which they surround. From the open mouth of these follicles the blood is poured into the cavity of the womb, until the congestion of the uterine vessels is relieved in menstruation, or until the excessive setting of the menorrhagic current in menorrhagia is diverted—(*a*) by cessation of the heart's action, as in syncope; (*b*) by changing the plasticity of the blood, as in the use of iron and cod liver oil; (*c*) by contracting the uterus and the muscular coats of the vessels, as with ergot; (*d*) temporarily by mechanical means, as with a vaginal tampon, by which a clot is produced in the cavity of the womb, to be afterwards expelled by labour pains, or to undergo solution in a more abundant transudation of blood; or, finally, by any means which shall arrest the transudation of blood over the whole mucous surface. For example, by an astringent escharotic so mild in its astringency as not to coagulate albumen before it has had time to penetrate the full thickness of the menorrhagic membrane, and so promptly and efficiently escharotic as to condense the follicles so that no more blood can be poured into them through their patulous walls, or through such portions of them as are already denuded of epithelium by persistent hæmorrhage. Tincture of iron fails in this indication, because it immediately produces a clot which constantly increases from subjacent accretion; tannic acid or alum acts similarly; solid nitrate of silver produces a solid superficial eschar, which, falling off, leaves a new hæmorrhagic surface, and furthermore it acts on the uterine tissue much as it does on the glans penis in chancre, producing increased congestion and painful erection, or in the womb a sense of extreme tension, described by the patient under the terms "bearing down," "fulness," &c.; zinc and lead lack the cauterizing power requisite, except the chloride of zinc, which is far too active if used in cauterizing strength, and dangerous to life from absorption if used in milder dilution. From these considerations Dr. Wooster states he was led to the employment of chromic acid, which, when absorbed into the blood,

is probably as harmless as manganic, sulphuric, or ferric acids, with which it is isomorphous. It is an oxidizing agent of slow but persistent action, and of considerable power on account of the facility with which it is reduced to the sesquioxide of chromium, isomorphous with sesquioxide of iron, and quite as harmless to the economy in certain doses. Dr. Wooster states he has now used it in several cases (one of which he gives), both for menorrhagia and leucorrhœa, with uniform and absolute success. In leucorrhœa he uses it in the strength of fifteen grains to a drachm of hot water, having first dilated the cervix with a sponge tent. One injection is generally sufficient when the general health is not seriously impaired. The injections in any event should not be repeated in less than four or five days. Unless the cervix be well dilated before the injection, the most alarming collapse may supervene in a few moments. The same thing will often happen, even if the cervix has been well dilated, unless the patient remain in bed at least twenty-four hours after the injection. Notwithstanding these *possibilities* of harm the chromic acid is perfectly harmless if used with the precautions suggested; and if it will cure a chronic uterine leucorrhœa it is certainly worth the trouble of being carefully handled, and its *possible* dangers are no greater than might result from the careless use of salt and water. If labour pains and tendency to collapse should supervene from the carelessness of physician or patient, hot fomentations to the abdomen, lavender and ammonia or brandy internally, with absolute rest in bed, will afford prompt and permanent relief. (*Hay's American Journal*, Oct. 1869.)

Treatment of Chorea.—Dr. Inman contributes an able paper to the Liverpool Reports on this disease, the cause of which he considers to be most frequently fright, and which he remarks is commonly associated both with cerebral and bodily debility. Can we hope, he asks, for a specific? Clearly not. We have, it is true, medicines which influence the muscles—conium paralyses them for example, and strychnine forces them to contract, but neither strengthen their fibre, nor add to their tone; in like manner belladonna, green tea, henbane, and opium, affect the cerebrum, but none of them enhance its quality. Can we improve a brain already upset by fright, by playing upon a patient's fears, and ordering a shower-bath, a birch rod, or any horrible punishment? Clearly not. Fright upon fright is more likely to kill than cure. There being no known specific, we are driven back upon general principles, and must endeavour to improve the constitution as a whole, and the muscles in particular. To fulfil the first indication we employ generous food, and abundance of it, and rapid improvement often follows; but in hospital cases the child is in many in-

stances too low to be readily raised: such cases require a long course of rest in bed, tonics, good diet, cod-liver oil, and the like. To fulfil the second indication, the only means we possess are, shampooing in the first instance, and regulated exercise when the muscular structures begin again to regain their firmness. To the first Dr. Inman thinks the profession has paid too little regard. Thought highly of by the Greek and Roman doctors, it has fallen into disrepute amongst their British successors, and is generally left to unlicensed practitioners; yet it is of infinite value, and when employed in conjunction with medicated unguents is of great importance. Dr. Inman gives the details of a case affecting all the muscles of the right upper extremity, in which, after shampooing with oil of turpentine and olive oil in equal parts had been tried without effect, an almost perfect cure was wrought by the employment of a morphia ointment, containing one grain of morphia to a drachm of lard. Dr. Inman thinks it doubtful whether local chorea is ever perfectly cured in an adult. A strange part of the history of local chorea, and a fact which seems to indicate the existence of a cerebral rather than a local cause, is that if the shaking limb be compulsorily maintained at rest the corresponding member will be affected. When this is the case it is impossible to predict a recovery. There is not, indeed, any distinct indication for treatment. Blisters to the nape, ears, or temples, bromide or iodide of potassium, opium, &c. may be tried, and may possibly appear successful, but only for a time. Nature may cure these affections, as she sometimes does epilepsy, but art can do little either to persuade or coerce her to the task. (*Liverpool Medical and Surgical Reports*, 1869.)

Excipient for Pills.—Mr. S. B. Turney recommends, as a good general excipient for pills, two drachms of powdered tragacanth and six drachms by measure of glycerine. These are to be mixed in a mortar, and though at first semi-fluid, soon become a firm, tenacious mass, which keeps well, and but a small quantity is required, even with such substances as quinine or iodide of potassium. Pills made with it do not become hard. (*Pharmaceutical Journal*, Jan. 1870.)

Pyæmia.—Mr. Bell, of the Royal Infirmary, Edinburgh, records three cases of pyæmia of an acute character supervening in the first on trephining of the tibia for abscess. Amputation was performed when it was found that the tibia had necrosed. In the second and third the constitutional affection followed a compound fracture of the leg. In all perfect recovery took place; and in his remarks he observes that in all the cases he directed his attention, not to any hope of finding antidotes, or chemically acting on the poison (giving no specifics or mercury), but, in the

first instance, to keeping the prima via in such a state as best might aid assimilation of nourishment; and secondly, giving the nourishment in such a form as might most easily be taken up.¹ Milk, with lime-water, eggs, beef-tea, at short intervals and in small quantities, were the chief remedies; an occasional purgative enema, or even a purge of castor-oil when required, and really very little else. The first case, from his excessive weakness, had for some days eight ounces of port, and four ounces of brandy, but this was soon diminished. The second case was ordered quinine, but could not bear it, as it produced loss of appetite. The third case had hardly any drug during the whole of his long illness. Mr. Bell states he has more than once (in other cases) tried the use of the sulphites internally, as recommended by Dr. Polli, but was unable to satisfy himself that any benefit resulted. Indeed, their effect on the patient's appetite was generally so bad as very speedily to cause them to be given up. Hot drinks, not necessarily containing alcohol, even hot water, or hot milk and water, were found very useful in preventing rigors, which a cold drink would inevitably have hastened. Mr. Bell has further been led to lay great stress on the importance of delaying the dressing of the patient's wounds when his skin is moist or he feels a rigor to be imminent, and selecting such times as he himself will soon learn to recognise to be the most suitable, as involving the least risk of chill. Finally, he observes with truth that no case of pyæmia will ever recover without the most careful and devoted nursing. (*Edinburgh Med. and Surg. Journ.* January 1870.)

Transfusion in the Asphyxia of a New-born Child.—

Dr. de Belina gives the details of a successful case of transfusion in a child under these circumstances. A Russian lady, in the eighth month of her pregnancy, was severely shaken by a collision on a railway. The pains of labour immediately supervened, and on removal to an adjoining hotel, Dr. Belina was called in. He found the membranes ruptured, the os fully dilated, and the head presenting. Sharp expulsive pains soon came on, but when the head was born, it was found that the neck was surrounded by two coils of the cord. It was found impossible to release them, and the cord was accordingly divided with scissors, and he endeavoured to terminate the labour. Unfortunately, the evolution of the shoulders lasted for some minutes, and the infant became asphyxiated and violet. The cardiac beats were much enfeebled. For ten minutes he fruitlessly applied the ordinary means of restoring suspended animation. The beats of the heart became still feebler, and he determined on resorting to transfusion. The difficulty, however,

here occurred that no one was willing to be bled for the sake of the child, and he therefore employed the blood flowing from the placenta of the mother, which was spontaneously discharged. The blood was defibrinated with a small piece of whalebone, and thirty grammes (about an ounce) was injected into the umbilical vein in several portions by means of a glass syringe. Immediately after the injection the infant shivered and presented fibrillar contractions of the muscles of the face, at the same time drawing a long breath. The beats of the heart became stronger, and the respirations regular. The next morning it took the breast, and is now a healthy child, nearly a year old. (*Gazette Médicale de Paris*, No. 2, 1870.)

The Use of the Sulphites in Puerperal Affections.—A series of long articles have been communicated to the *Wiener Medizinische Wochenschrift* by Professors Bernatzik and Braun, on the administration of sulphites and hyposulphurous acid to lying-in women, so strongly recommended by Polli, de Ricci, Cummins, and others, as agents by which fermentative processes in the blood could be arrested, and which, as a consequence, were well adapted for employment in zymotic diseases. The results of their investigations appear to be decidedly against their use. They are exceedingly nauseous to the taste, frequently producing inclination to, if not actual vomiting. They have a great tendency to produce diarrhoea of a violent character. The professors are unable to corroborate Polli's assertion that the sulphites diminish thirst and feeling of heat. For these reasons they think the remedies in question are decidedly contraindicated in puerperal affections. (*Wiener Medizin. Wochenschrift*, Nos. 94—99, 1869.)

Substitute for Cod-liver Oil.—The wide distribution of scrofulous diseases, especially in children, renders it a matter of great importance to discover remedies which will fulfil the purposes of cod-liver oil, and other anti-scorbutic drugs, and at the same time commend themselves to the palate of the little patients. Such a remedy M. Grimault, the well-known apothecary of Paris, believes he has obtained in what he has named the *syrupus raphani iodatus*. This contains the constituents of the *syrupus antiscorbuticus* of the Paris Pharmacopœia (raphanus, cochlearia, nasturtium, cortex aurantii, &c.), about half a grain of iodide to the ounce. This is stated to have proved very efficacious in the various scrofulous affections of children, such as glandular diseases, discharges from the ear, inflammatory diseases of the eye, photophobia, scrofulous diseases of the skin, scrofulous ulcers, spina ventosa, scrofulous diseases of the bones, and in chronic bronchitis and

bronchorrhœa, in which last its curative effects both in children and adults are very remarkable. (*Wiener Medizin. Wochenschrift*, No. 94, 1869.)

Veratrum Viride in Pneumonia.—Professor Hertz communicates two cases of pneumonia, in which about a seventh of a grain of the extract of veratrum viride for a dose every hour was employed; vomiting was induced by the remedy after the third dose in one case, the pulse, respirations, and temperature speedily falling. In the other a similar rapid diminution in the action of the heart and lungs, and of the animal heat before vomiting occurred, was observed; both cases made a good recovery. (*Bulletin de Thérapie*, lxxvi. p. 468.)

Caution against plugging the Vagina with Perchloride of Iron.—Dr. Tissier has recently reported an interesting case to the Parisian Medical Society, showing that this remedy should be employed with great care. The patient, who was forty years of age, previously in good health, was suddenly attacked with slight menorrhagia. This lasted for three weeks, and then greatly increased in severity, nearly three pints of blood being lost. Great pallor and exhaustion ensued, the pulse being imperceptible. The belly was covered with cold compresses, and the vagina was plugged without the use of the speculum, by means of three balls of charpie dipped in perchloride of iron, and these again were followed by the introduction of more charpie dipped in a solution of one-fourth of the perchloride of iron salt, and three-fourths water. She was directed, in addition, to take, every ten minutes, ergot, cold soup, and ice, and subsequently tea with rum. After two hours the discharge of blood had entirely ceased, and on the following day the superficially situated masses of charpie were removed. After forty-eight hours, the charpie dipped in the pure solution was removed, the patient not having complained of any pain. Five days later she stated she was suffering from violent burning pain in the vagina. Emollient injections were used with advantage, and seventeen days after the plugging, a large portion of mucous membrane sloughed away. The recovery was tedious; six weeks after menorrhagia again occurred, with the recurrence of the usual menstrual epoch, and on examining the vagina, a very resistant fibrous ring was discovered, which scarcely permitted the passage of the little finger. Two centimetres higher up was a second ring, to which the collum uteri was attached. (*Wiener Medizinische Wochenschrift*, No. 95, 1869.)

Arseniate of Antimony in Pulmonary Emphysema.—Dr. Koch recommends the employment of this remedy in emphysema, not only on empirical grounds, but because he considers it may reasonably be regarded as a nervine and muscular

tonic. Hence, since in emphysema the pulmonary vessels are dilated and inelastic, rendering them incapable of contracting in the act of inspiration, the administration of the arseniate effects improvement through its invigorating influence on the contractile fibres, enabling the respiratory acts to be more easily accomplished. Again, the arseniate is particularly efficacious in those cases in which there are frequent attacks of asthma; for these are induced either by centripetal or centrifugal irritation of the spinal cord and medulla oblongata. The *point de départ* of the attacks is either peripheric or central. It is peripheric when the branches of the pneumogastric are acted on at their extremities by any cause, as vitiated air, a temperature too cold or too hot, which may lead to congestion of the neurilemma, or otherwise interfere with the nervous current. In such cases the arseniate of antimony, employed in the form of fumigations, produces excellent results. Both metals have an elective action on the lung, and are eminently sedative and capable of relieving congestion. When, however, the attacks of asthma are due to emotion, or to some other centrifugal action, there is little chance of benefit from this mode of treatment. The arseniate is employed in the form of cigarettes, containing a definite proportion of the drug, and the smoke taken into the mouth is slowly and gently inhaled into the lungs. (*La Presse Médicale Belge*, No. 5, 1870.)

Galvano-caustic Method of removing Tumours in the Larynx.—Dr. Reichel, of Breslau, communicates the results of his experience in reference to this mode of treatment, which he states has proved of the greatest service in his hands. It is available for all sorts of tumours, even when they are multiple or have a very broad base, and there is no danger of subsequent loss of voice. A good battery and a skilful operator are, however, indispensable. The instruments required are few, simple, and delicate, the chief being a cutting-loop of wire and an extremely fine galvano-cautery, thus contrasting favourably with the knife, scissors, and crushing instruments demanded for other methods. The pain suffered by the patient is very small, scarcely amounting to more than a sensation of heat. The action may be rendered very limited indeed. The time required for the operation is also very small. The instrument is introduced whilst cold, and as soon as the cautery is in contact with the surface, or the tumour is enclosed in the wire-loop, these can be brought to a white heat, and as instantaneously cooled. There is no hæmorrhage, and no disagreeable after-effects have been observed. Unless the growths are of a malignant nature no recurrence takes place. On the whole, he coincides with Türck that for the treatment of tumours of the

larynx the galvano-caustic method is indispensable, and constitutes one of the greatest triumphs of modern surgery. (*Berliner Klinische Wochenschrift*, No. 51, 1869.)

Cæsarean Section performed after the Death of the Mother.—Dr. Beckmann records an interesting case of this kind. In some preliminary observations he refers to a case in which the operation was performed successfully by a midwife on a woman struck dead by lightning, and quotes the observation of Hennig: "That the results of the operation performed *post mortem matris* are but little favourable to the child, but that it is most likely to succeed when the death has followed some shock to the nervous system, as in apoplexy or traumatic injury to the brain and spinal cord; that it is less likely to terminate favourably to the child when the death-agony has been prolonged; and that it is most unfavourable of all in cases of suffocation with carbonic acid gas." The case given was that of a woman in the eighth month of her pregnancy, who had lost her consciousness during the pains on the previous day to that on which Dr. Beckmann was called in, and had never regained it. She was 25 years of age, a primipara of robust make, and with very ruddy cheeks, which appeared to be swollen. The conjunctivæ were ecchymosed, the pupils small, and bloody foam appeared about the mouth; there was great restlessness, accompanied by violent chronic spasms of the upper extremities. Lower extremities very œdematous, vesicular râle over the lower lobes of both lungs posteriorly. Pulse 120, full. The child was on examination found to be alive. Delivery proceeding, the os uteri slightly dilated, head presenting. Venesection was practised, half a grain of morphia was injected subcutaneously, a purgative enema administered, and ice applied to the head. After four hours comatose symptoms occurred, with loud tracheal rattle, and in a few minutes she died. Remembering the investigations on animals made by Breslau, in which no instance of recovery of the fœtus took place when more than five minutes had been allowed to elapse after the death of the mother, Dr. Beckmann at once applied to the husband to be allowed to perform the Cæsarean operation. Permission was granted, and five minutes after the last inspiration and contraction of the heart, the section was made with an abscess lancet, no other instrument being at hand. The child on being withdrawn weighed four pounds, was apparently dead, the heart scarcely beating perceptibly. In the course of two and a half hours it began to breathe with regularity, after prolonged and varied modes of promoting artificial inspiration had been adopted. It is now growing up a fine healthy child.

The operation was performed on the 4th March, 1867. (*Berliner Klinische Wochenschrift*, No. 51, 1869.)

The Treatment of Psoriasis.—Dr. Passavant, of Frankfort on the Maine, in a letter to Professor Hebra recommends, as a specific remedy for psoriasis, the employment of an exclusively animal diet. Dr. Passavant's first experiment was made upon himself. He has suffered for twenty-five years from this disease, which ultimately affected the entire surface of the body, notwithstanding the trial of all the ordinary remedies. When the affection was at its height, both in point of extent and severity, he experimented on the effects of an exclusively animal diet: immediate improvement was observed, and after a few weeks he was perfectly well. Dr. Passavant states he has seen another case of psoriasis treated in a similar manner, in which the scabs entirely disappeared in the course of six weeks. On the patient's returning to an ordinary diet a relapse occurred, which was again overcome by a return to an exclusively animal diet. Dr. Caspari, in some observations on this mode of cure, observes that he has had no opportunity of trying it, but that he is himself an example of the curative effect of a precisely opposite plan of treatment. It appears that, like Dr. Passavant, he has been for full thirty years subject to psoriasis, affecting the whole of the body, together with the upper and lower extremities. He also had tried all kinds of remedial means without effect; but some years ago, in consequence of a chronic catarrhal affection of the stomach, he was unable for many months to take anything for breakfast beyond a cup of milk with a little bread, soup and rice for dinner, and milk porridge for supper. His practice being considerable, this diet was insufficient to maintain his physical powers, and he gradually lost weight, but coincidentally his psoriasis vanished: it was starved out. (*Deutsche Klinik*, Dec. 18, 1869.)

Waters of Plombieres in Dyspepsia.—M. Bottentuit gives detailed accounts of several cases of this form of disease, in which the disordered condition of the stomach was accompanied by a considerable degree of flatulence and much pain during digestion. In one of these cases all exercise, or even the standing position, exasperated the pain, which was of a local and constricting character, distinct from the pain often accompanying pyrosis, and that of hysterical gastralgia. The patient had had four children, and was anæmic. The continued use of the waters, both internally and in the form of baths, effected in all the cases, if not a perfect cure, great alleviation in the symptoms. (*L'Union Médicale*, Jan. 29, 1870.)

Notes and Queries.¹

DR. MARSTON.—This gentleman has written to complain that our printers have not done justice either to the style or the grammar of his note to us, published and commented on in the *Practitioner* for February. We are very sorry if this is the case, but for the life of us we cannot detect these alleged printers' errors. And we will go so far as to say that Dr. Marston seems to us quite needlessly sensitive about his literary reputation, for the letter appears to us, apart from its opinions, with which we cannot agree, an able and well-written production.—ED. PRACTITIONER.

THE POISONOUS DOSE OF CHLORAL.—We have received the following important note from Dr. J. R. Reynolds:—"I was called to see a lady of middle age, who had, for the relief of neuralgia, taken hydrate of chloral.

On the third day before my seeing her she had taken gr. 10 and gr. 15, and had found much relief. On the day before she had taken a larger dose with good effect.

On the day of my being summoned the dose had been increased to gr. 45 or gr. 50, and there had followed complete relief of pain; but in the course of an hour some 'faintness' was felt, and when I saw the patient this had increased to an alarming degree. Two hours had passed since the last dose was taken, and I found the patient with cold extremities; an excessively rapid, weak, irregular, and intermittent pulse; jactitation of limbs; an intolerable sense of sinking, and oppression at the pit of the stomach; gasping breathing, and confusion of thought.

I observed at this time, and for three-quarters of an hour subsequently, that the radial, temporal, and tibial pulses were all of the character I now describe—frequent, weak, irregular in

¹ The Editor, being desirous of making this department a useful medium of communication between practitioners, will be glad to receive short notes on theoretical or practical points in therapeutics,—brief jottings on those numerous queries which suggest themselves from time to time to a medical man as he "goes his rounds," but which he has neither the time nor, in some cases, the opportunity of answering. The Editor does not pledge himself to reply to every question addressed to him, but he hopes to make the "department" the means of supplying the information required; and this he can only effect by the hearty assistance of his readers.

both force and rhythm, and frequently intermittent—but that the heart was acting regularly, although with increased frequency and diminished force.

Stimulants, with white of egg, were administered freely, warmth was applied to the extremities, sinapisms were put on the cardiac region, fresh air was introduced plentifully into the room, and at the end of an hour from my first seeing the patient the pulse had become much steadier, though still very frequent and very weak. The syncopal feeling had diminished, the feet were warm, and there was a tendency to sleep.

This state of comparative freedom from urgently dangerous symptoms lasted for longer than an hour, when—without any apparent cause—they returned with increased severity. The patient now seemed in the gravest danger. The superficial pulses were almost imperceptible, and when they could be detected presented the character I have described. Still the heart was regular in its beat, although feeble, and intensely rapid in its pulsations. The mind wandered much; there was utter prostration of muscular strength, the limbs being extended, the head low, and the aspect was at times that of impending dissolution. There was great dyspnoea, a sense of suffocating oppression at the base of the chest (in front), and urgent thirst.

The treatment previously adopted was again pushed vigorously, and at the end of an hour and a half relief was obtained, and sleep followed. The next morning I found the pulse quite regular, and of its normal frequency.

I have written this hastily, but pray put it in your own way, and make any or no use of it as you think best.

The points of interest that occurred to me were: 1st, the dose; 2d, the time between its administration and the appearance of symptoms; 3d, the recurrence of symptoms after their temporary cessation; 4th, the curious effect on the vessels, which was obviously not due to effect on heart; 5th, the relief by food and stimulant. I found that the albumen (of two eggs) was that which was followed by a calming effect, and a tendency to sleep."

COMPULSORY VACCINATION.—Mr. F. W. Parsons, of Wimbledon, writes to us as follows:—"Dr. Turner, in his excellent 'Plea for Compulsory Vaccination,' suggests the probability of the lymph obtained from a second vaccination being enfeebled. I think I can bear testimony to it. When I was public vaccinator, I tried the experiment in several cases, and although the vesicle the lymph was taken from seemed quite perfect, the result was invariably *nil*, or an imperfect and blighted vesicle at the best: when these subjects were vaccinated with primary lymph, they passed through the stages quite naturally."

GUAIACUM AS A REMEDY FOR CYNANCHE TONSILLARIS.—Mr. J. Carter, of Petty Cury, Cambridge, sends us this note:—"I can very confidently confirm, by my own experience, the opinion of Dr. Atkinson, as to the value of guaiacum in the treatment of cynanche tonsillaris. I have been in the habit of employing the remedy for the last twenty years, and I regard it as well-nigh a specific in this affection, if administered before suppuration has actually commenced. Moreover, I believe that its use, even after matter has formed, limits the extent of the suppuration, and mitigates the severity of the attack. I give the medicine in larger doses than Dr. Atkinson prescribes, namely, from ʒj to ʒss:—

R Pulv. G. guaiei ʒij—ʒiij.
 Potass. chlorat. ʒij.
 Pulv. trajac. comp. ʒss.
 Syr. simpl. ʒiij.
 Aquæ ad ʒviij.—M.
 St. $\frac{1}{6}$ th part every four hours.

"As a gargle I prescribe a weak solution of citric acid sweetened with honey.

"I have no very definite idea as to the *modus operandi* of the remedy, but I believe it to have some direct action upon the mucous surfaces to which it is applied. When given in half-drachm doses it usually acts as an aperient, and I think those cases do best in which such effect is produced.

"Guaiacum, as prescribed above, will also be found very serviceable in other forms of inflamed sore-throat, especially those which are marked by a reddened and swollen condition of the fauces, either with or without ulceration.

"I claim no originality as to the employment of guaiacum in throat affections. Reference to its value as a remedy was made by Dr. Bell, of Barhead, twenty years ago; also by Dr. Bryden, in *Brit. Med. Journ.*, 1857, p. 967.

"To this testimony I gladly add my own, as I regard the medicine of greater value than any other."

THE TREATMENT OF VAGINISMUS BY FORCIBLE DILATATION.—We perceive that we were last month guilty of a considerable injustice to Dr. Wharton P. Hood. We inadvertently quoted a paragraph by Dr. Tilt, in which the latter assumed that a case recently published by Dr. Hood in the *Lancet* had been treated upon principles previously laid down by Dr. Tilt. Such was not the case. Dr. Tilt, it appears, had recommended (in opposition to the surgical division of the sphincter vaginae) forcible dilatation with the two thumbs, and keeping a large metal bougie in for some days afterwards. Dr. Hood, who had seen nothing of Dr. Tilt's writings on the subject, had to treat a patient in whom

persistent vaginismus had entirely prevented effective intercourse, though she had been married some years. He did this by the forcible introduction of a speculum, which was repeated several times; the result being that the vagina was permanently dilated to such an extent that natural intercourse took place, and pregnancy followed.

HYDRATE OF CHLORAL AS A HYPNOTIC.—Mr. Francis Goolden, of Maidenhead, has kindly communicated a case bearing on this point. He tells us that in a paralysed gentleman, of middle age, who from the extreme contraction of his lower limbs, and from other causes, suffered great pain, and was hardly able to get any sleep, he tried it in a half-drachm dose; the result of this first experiment being that the patient had a tranquil sleep of twelve hours' duration—and this after various other narcotics had failed to give any relief. But it was disappointing to find that on subsequent occasions, although the chloral was given in large doses, sleep was not obtained, but the patient was merely thrown into restless semi-delirium. It may be, that beyond a certain dose chloral loses its proper *hypnotic* effects; and, indeed, we are rather inclined to think that this will prove to be the fact.

PUERPERAL CONVULSIONS TREATED WITH HYDRATE OF CHLORAL, AFTER FAILURE OF BELLADONNA AND BROMIDE.—Mr. Hay, of Caledonian Road, sends the following:—

“Mrs. A—— was confined with her first child on February 9th, at 7.30 A.M.; it was a breech presentation, but no difficulty was experienced. At 12.30 P.M. she was suddenly seized with convulsions, and continued having three or four attacks every hour, each increasing in severity, till 7 P.M., when I gave her 60 grains of hydrate of chloral: she had an attack soon after. She then slept quietly till 1 A.M., when she had another attack, but much milder; I gave her 30 grains more of the hydrate. After that she had no more convulsions, but continued to sleep till about 3 P.M., except at short intervals, when she was roused to take nourishment. When she awoke, she complained of great headache, which continued till next morning; she then complained of everything appearing unnaturally large. She has had no bad symptoms since.”

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¹ Any of the foreign works may be procured by application to Williams & Norgate, of Henrietta Street, Covent Garden, W.C. ; or Messrs. Dulau, of Soho Square, W.C.

THE PRACTITIONER.

APRIL, 1870.

Original Communications.

ON THE EFFECTS OF COMPRESSION OF THE VAGUS NERVE IN THE CURE OR RELIEF OF VARIOUS NERVOUS AFFECTIONS.

BY AUGUSTUS WALLER, M.D., F.R.S. OF GENEVA.

Laureat of the Institute of France (Académie des Sciences).

It would appear that the effects of pressure on the large veins of the neck were well known to the ancients. Caspar Hoffmann¹ states, on the authority of Benedictus, "that the Assyrians were in the habit of tying the veins of the neck so as to cause insensibility while performing circumcision on adults." Whatever obscurity may be attached to this passage, it is certain that Aristotle² mentions "that if the veins of the neck become compressed exteriorly, one sees a man shut his eyes and fall down senseless as if he were strangled, although he is not so." Serapion likewise mentions the influence of pressure on the vessels of the neck for the relief of headache.

But although these facts may be of interest in the eyes of the scholar, and excite his attention from the halo of antiquity with which they are invested, it is not on such grounds that they can claim to be noticed by the physician. We must approach a

¹ Caspar Hoffmann de Thorace (ed. 1825), p. 77.

² Aristotle, *Histoire des Animaux*, Traduction Française de Cuvier (édition de 1783), p. 127.

much more recent period before we find these facts stamped with any of the signs requisite for medical currency. Dr. Parry, of Bath, was the first to apply practically what he termed compression of the carotids for inducing sleep, and for the immediate relief of attacks of hysteria and even epilepsy.¹

In 1848 I published some cases which occurred in my own practice, showing the advantages of compression of the carotids for the removal of violent headache, and of epilepsy, hysteria, &c.²

Dr. A. Fleming also has treated the subject of compression of the carotids in a paper which I regret that I am unable to refer to here.³

All these authors, including myself, invariably attributed the results produced to the decreased circulation of the blood in the brain consequent on the compression. There was a large pulsating artery full of blood, by pressing on which so as to interrupt the passage of the blood to the brain, the effects observed were caused. It was a case of *post hoc ergo propter hoc*, which, together with our knowledge of the cerebral functions, appeared to afford a most satisfactory solution of the problem.

Only a much closer and more physiological examination could reveal the flaw in this apparently unbroken chain of evidence. In 1861, when making an observation on myself to ascertain if I could obtain on the vagus and sympathetic nerves at the neck similar symptoms to those obtained on animals by irritation of their nerves by galvanism, I quickly perceived that I could reproduce to a greater degree than I might have expected many of the effects obtained on animals.

Before entering more fully into the subject, I may be allowed to recapitulate the grounds on which I form my opinion that *the effects observed were owing to the irritation of the vagus and sympathetic nerves*.

In the first place, with regard to the supposed influence of the carotid arteries. Sir Astley Cooper showed that on animals the common carotid artery may be tied without producing any perceptible effect on the heart's action.

Professor Miller, after numerous experiments on the same

¹ Parry's Pathology. Passim, 1825.

² Journal of Physiological Medicine, 1848.

³ British and Foreign Quarterly Medical and Surgical Review, vol. xxx.

subject, came to the conclusion that the ligature of both carotids produced no bad effects on animals.

I have repeatedly tied or compressed both these arteries in animals without observing the least signs of disturbance in the heart's action, or in innervation.

On man one of the carotids has frequently been tied, and in the great majority of the cases no immediate symptoms of a marked character have been witnessed; the secondary symptoms which have occasionally supervened, such as convulsions, coma, collapse, &c., being of a totally distinct nature, and generally attributable to lesions of the brain. In some instances it is true that impaired eyesight and syncope have immediately followed the ligature of the artery; but these symptoms were evidently owing to the vagus and sympathetic nerves having been included in the ligature of the artery, and when such is the case in animals the symptoms are found to be similar.

Even both carotids have been tied by Mussey¹ on man at a few days' interval with complete success, without any unfavourable symptoms, either immediate or secondary, making their appearance.

I will now briefly state the functions of the vagus and cervical sympathetic nerves.

The vagus nerve descends from the medulla oblongata, whence it takes its origin, close to the part termed the "*nœud vital*" by Flourens. Near its origin there exists a ganglion, and lower down another ganglion or ganglionic structure, near the point where it gives off the superior laryngeal nerve.

In this interganglionic space the vagus receives a large branch from the *accessorius*, the fibres of which become intimately blended with those of the true vagus, viz. those arising from the medulla oblongata. As it passes downwards to the stomach, the vagus is at the neck in such close juxtaposition with the carotid artery and internal jugular vein that we cannot compress the artery without being liable to include the nerve in the pressure. The vagus, as we all know, sends off numerous branches to the lungs, the heart, the stomach, &c.

On galvanising the trunk of the vagus, the larynx, the stomach, and the bronchial tubes are made to contract, and the action of

¹ American Journal of Medical Sciences, 1830.

the heart is completely stopped ; *all which effects are evidently owing to the motory fibres which the vagus contains*, and which, as I have elsewhere shown,¹ are nearly, if not wholly, derived from the branch of the accessorius.

Besides these motor fibres, the vagus contains sensory or excito-motory fibres belonging to the pure vagus, and arising, as we have seen, entirely from the medulla oblongata.

The influence of these fibres may be shown after the division of the nerve by galvanising the upper segment. When much pain is excited we have vomiting, coughing, and disturbance of the heart's action. The fibres of the true vagus may therefore be regarded as collecting all the sensory and excito-motory power from an immense territory formed by the internal surface of the lungs, larynx, heart, and stomach, each different fibre joining the trunk of the vagus, which enters the central nervous system at the medulla oblongata.

When we examine the structure of its fibres, we find them so exceedingly minute that their number is much greater than in an ordinary spinal nerve of the same dimensions, probably twenty or thirty times greater.

Closely connected with the vagus at the neck we find also the cervical sympathetic cord, which is derived from an extensive portion of the spinal cord named by myself and Budge the cilio-spinal region, the centre of which is situated near the origin of the second dorsal pair, together with which it arises from the spinal cord. After separating from this pair, these fibres form the principal part of the cervical sympathetic that ascends upwards in close adhesion with the vagus.

The fibres of the cervical sympathetic are almost entirely motory, and when they are galvanised we observe *dilatation* of the pupil and contraction of the vessels of the face and ear, with decreased temperature of those parts, and at the same time widening of the eyelid and protrusion of the eyeball. After section of this nerve, *contraction* of the pupil is produced, with dilatation and increased vascularity of the arteries and increased temperature of the face and ear.

Before I treat of the effect of pressure on the vago-sympathetic nerve, I will consider the symptoms produced by this means on

¹ Proceedings of the Royal Society, vol. viii. p. 69.

other nerves more accessible to observation, such as some of the mixed spinal nerves.

When compression, for instance, is applied over the ulnar nerve at the elbow, we find that a certain degree of pressure generally causes pain referred to the little finger and inner side of the hand. If the pressure be continued the pain increases, and symptoms of numbness, anæsthesia of the skin, and paralysis of the muscles supplied by this nerve gradually appear. When the pressure is removed these symptoms disappear, leaving behind a sense of fatigue, which remains for some time. When the nerve has been further irritated the whole limb frequently feels fatigued, especially over the deltoid muscle.

The localisation of the sensation in the little finger and side of the hand is an illustration of the aphorism, that two pains arising at the same time the greater obscures the lesser; for the like occurs with other nerves, such as the radial, the median, and the external popliteal, the sensations being referred to the most sensitive region supplied, while the other parts supplied by these nerves remain insensible.

With respect to individual differences, these are very great, pressure on the ulnar nerve causing the most sharp pain with some persons, while with others the nerve appears as insensible as a tendon. Numbness and paralysis are easily induced in some instances, while in others they are difficult to obtain. I have known the pain from pressure of the ulnar nerve to be so great in some individuals as almost to cause a state of syncope from the shock to the nervous system.

When the vagus nerve is compressed beneath the integuments in animals in the same manner as in man, without dividing the skin, the symptoms produced are more perceptible than when after the nerve has been exposed, which is probably attributable to the functions of the nerve having been disturbed by exposure.

Professor Bert, of Paris, has made some experiments on the effect of very strong galvanism of the vagus. He divided the par vagum, and on one side strongly galvanised the upper segment. According to him a very strong shock was liable to cause death without convulsions. We find, however, that such results were only obtained on animals already very exhausted from the division of the par vagum having been made some

days previously, or in other words, when the animals were half dead.¹

The symptoms belonging to the vagus are, 1st, respiratory; 2d, gastric; 3d, cardiac; 4th, laryngeal—these however, from their hidden nature, are inaccessible to direct observation except by means of the laryngoscope; 5th, those of nervous shock or sideration, which belong to all the sensory nerves in a greater or less degree according to individuals, but which, as we have seen, are more evident on the vagus than with other nerves, as might be expected from the importance of its functions and of the part of the spinal cord from which it springs.

In addition to the symptoms belonging to the vagus we have those pertaining to the cervical sympathetic, viz.: 1st, Influence on the iris; 2d, Influence on the vessels of the face and ear; 3d, Those relative to the eyelids and degree of protrusion of the eyeballs.

We have now to see how far pressure applied to the neck corresponds to the various requirements of the case, or, in other words, to what extent the symptoms observed on man correspond to those on animals and to the anatomical distribution of the vagus.

Compression of the vagus on one side may be applied at various points of the neck from the angle of the lower jaw downwards, but as a rule the most convenient spot to compress is close to the angle of the lower jaw, and for a short distance above and below, where the nerve and vessels are most exposed and more easily pressed back upon the hard part behind.

Lower down the neck the sterno-mastoid muscle and thyroid are considerable obstacles to the application of a sufficient amount of pressure. Where the vagus is accessible low down in the neck, it is desirable, in cases where compression is requisite, to try its effects at this region if it is intended to subdue gastric symptoms, such as vomiting, &c., as I have sometimes found that compression low down in the neck affects the stomach more than when it is applied near the maxilla.

The pulsations of the carotid artery supply us with the best guide for finding the nerve. I generally prefer compressing with

¹ Bert, Des Effets de la Section du Nerf pneumogastrique. Archives de Physiologie, No. 3, 1869.

the thumb over this vessel, the other fingers resting upon the posterior part of the neck. In most cases the first indication of our compressing the nerve itself is a sensation of want of air, followed by a deep and laborious respiration. This heaving respiration which continues to be experienced may be considered as a sure sign that the nerve has been found, and that its innervation is already affected. It is not always so readily detected, and we must often try several points of the neck until we obtain some symptoms of its presence.

At the same time that the respiration is thus affected the heart's action becomes much disturbed and its rhythm altered, being weakened and irregular, although somewhat accelerated. This diminished power of the heart is easily detected by the weakness of the pulse at the wrist, and by the pulsations of the carotid artery under the thumb, where they are felt fluttering and irregular.

A continuance of the pressure at the neck, after producing the above symptoms, soon causes a retardation of the heart's action to the amount of five or six pulsations in a minute. These motor effects on the heart are frequently accompanied by a certain degree of uneasiness and sense of sinking over the præcordial region.

The gastric symptoms are in general very slightly felt. In some persons, however, a feeling of uneasiness is experienced over the whole of the epigastrium. These symptoms sometimes amount to nausea, and even an effort to vomit, and are often attended by increased peristaltic action of the stomach and intestines, as shown by the borborygmi and other symptoms of flatulency.

CASE I.—On my own vagus I find the most sensitive point to be a little below the angle of the inferior maxilla. The pressure is performed on one side, as I have already stated, by bringing the hand in full pronation, and placing the thumb on the artery and the rest of the fingers in a row behind the neck. A few movements of the thumb enable me to find a sensitive place indicative of the presence of the vagus. When this is discovered moderate pressure soon occasions a deep-seated sensation of a peculiar benumbing character in the head, which scarcely amounts to pain. The sense of languor and of fainting, as if "going off," is so

manifest, that if the head and body be not supported, and if pressure on the nerve be continued, complete syncope ensues. Simultaneously other symptoms of a respiratory, cardiac, and gastric nature make their appearance. The respiration, at first arrested for a few moments, becomes heaving and retarded, the heart's action, depressed in force, is disturbed and irregular, as may be felt by the pulsation of the carotid under the finger. The gastric symptoms are marked uneasiness over the stomach, sometimes amounting to nausea and even vomiting.

After the pressure is removed the symptoms gradually decrease, the respiration and the heart's action return to their previous condition, but the nausea, uneasiness of the stomach, and flatulence remain for some time, particularly if digestion is in full action at the time. Lassitude, languor, fatigue, lowness of spirits, and want of repose, will still remain for an hour or two; or if walking is attempted, there is uncertainty in the gait from apparent fulness of the head, which is very uncomfortable.

In the corresponding ear there is frequently experienced a sense of warmth and tingling, which lasts for one or two hours after.

CASE II.—Dr. G. Julliard, Surgeon to the Hôpital Cantonal at Geneva, aged 36, in perfect health. Pressure near the angle of the jaw was made on one side of the neck. After about a minute there was a sense of oppression, and the heaving of the chest commenced; the pulse became weakened and irregular; the countenance became very pale, and as fainting was coming on the pressure was removed, and Dr. Julliard quickly recovered, the respiration returning to its normal standard. Although the respiration had become quite normal, Dr. Julliard remained pale and rather languid, and on walking felt a degree of unsteadiness, which he described as the “*demarche titubante*,” which lasted for several hours after.

CASE III.—Joseph Chevalet, aged 18. Compression of the left vagus was applied above the angle of the lower maxilla. After about a minute the heart's action was enfeebled and irregular, and the corresponding pupil became considerably dilated. The respiration soon became oppressed, and the patient complained of want of air and faintness. At this moment the pulse

at the wrist could scarcely be felt. These symptoms quickly disappeared after the pressure was removed. During the compression, and some minutes after, the cheek and ear of the corresponding side were more pale than those of the opposite side. The temperature of the cheek and ear was likewise much lower on the left side, showing a difference of at least three or four degrees centigrade, as near as I could judge in the absence of a thermometer.

CASE IV.—Dr. Prevost had the vagus compressed above the angle of the jaw about three or four hours after eating. Complained of its being very painful, and it was maintained for a very short time, about a minute or two. Experienced a sense of faintness and nausea corresponding to the region of the stomach. No difference could be detected in the size of the pupils, but he mentioned having felt particularly a sensation of protrusion of the eyeball. As in the preceding case, there was for some minutes after removal of the pressure some pallor on the corresponding side of the face with a fall of temperature, though much less perceptible. Thermometric measurement by means of one of Geissler's delicate thermometers showed a difference of 1.5 to 2 degrees centigrade in favour of the side non-compressed.

As regards the sense of protrusion of the eyeball, it is evidently necessary, before deciding whether this is a mere subjective phenomenon, to submit the question to careful measurement. It is unnecessary to point out the interest in determining this point and its bearing on the question of Grave's or Basedow's disease, where the cause appears evidently connected with irritation of the cervical sympathetic.

CASE V.—Mrs. T——. Two minutes after the application of pressure high up above the angle of the jaw there was buzzing and confusion of the head; no pain, but giddiness, and a gradual sense of faintness and "going off." There was a feeling of suffusion in the head, extending over the lumbar region and to the ends of the fingers, where the sensation was somewhat like "pins and needles." Five minutes afterwards, when the pressure had been removed, a sense of nausea ensued almost amounting to sickness, with borborygmi. A want of firmness in the legs, causing a tottering gait, supervened, and the belief of the patient

was, that if pressure had been continued vomiting would have resulted.

CASE VI.—Mrs. Y—— had been subject for some years to attacks of acute gastritis, during which the principal means employed to reduce the strong local pain, intense vomiting, nausea, and intolerance of most all injesta, were local depletion by leeches, and later in the attack by vesication (with agents not containing cantharides).

Gradually the acute attacks subsided, leaving an irritable stomach, and the diet was obliged to be confined to animal food and stale unfermented bread. Nothing cold could be tolerated by the stomach. When from any neglect of these precautions the symptoms attained any degree of intensity, vomiting was induced mechanically and the offending matter ejected.

During an attack of spasmodic vomiting it was deemed advisable to administer muriate of morphia, which was repeatedly rejected before it reached the stomach. During one of the paroxysms I applied pressure on one of the vagi, and to my surprise found the vomiting subside for a time; but returning shortly after, I soon found, after repeated attempts, that vagal compression would not permanently subdue the vomiting. Changing my tactics, I merely employed it as a means of inducing tolerance and rest for a sufficient time to allow of absorption. Half a grain of morphia was administered into the stomach, which was kept quiet from vomiting by occasional pressure on the vagus for about an hour. Although nausea still remained, at the end of this time the effect of the sedative became manifest; the vomiting had ceased, and finally the patient slept, and the attack was subdued.

Although this case appears to me to present some interest, as showing the way the two sedatives may occasionally be combined so as mutually to assist each other in certain cases where an opiate cannot be administered by enema or by subcutaneous injection, it was not so much on this account that I have introduced it.

On expressing my satisfaction at the improvement in her health, and the increased range in the articles of food that she was able to use with impunity, I found that she had been in the

habit of applying vagal compression to great advantage, thus making an application both novel and interesting. Whenever any considerable irritation of the stomach was felt after eating, instead of waiting until the symptoms became severe, she immediately applied slight pressure on the vagus, thus arresting the symptoms at their *début*, and digestion was completed without further inconvenience.

Whether this novel mode of applying sedation to the stomach can be generalised I am unable to say, but it was reasonable to expect some such result. In this case it has been the means of allaying distressing symptoms, and the patient has consequently improved in strength under its influence.

CASE VII.—Madame F——, after an accidental fall while out walking, suffered severe pain in the head, the nape of the neck, and the sixth and seventh vertebrae of the dorsal region. This latter spot had been the seat of much spinal irritation, sometimes confined to the spine, at others extending its influence to the intercostal nerves, causing severe pleurodynia, at other times radiating down the left upper limb. Complete rest in bed was enjoined, with aperients, hot fomentations at the nape of the neck, and dry-cupping over the spine.

On the following day there was exacerbation of the symptoms in the head and dorsal region; much mental excitement, and extremely severe pains over the frontal and parietal bones. The dorsal pain had extended down the left arm; the ulnar and median nerves were very sensitive to the slightest pressure. But the most distressing symptom of all was the occurrence of frequent fits of violent vomiting. The pulse was small and concentrated (80). On account of the vomiting, pressure was applied to the vagus of the left side. The effect was perfect quietude, with laborious breathing, for about ten minutes; pulse weak and very irregular.

After removing the pressure the patient remained perfectly quiet for upwards of ten minutes, during which the pulse was full and regular (70). There was apparently complete insensibility, but it is impossible to say how far this was really the case, as she was purposely left undisturbed. When she came to her senses the vomiting had ceased, leaving merely some slight nausea. The pain in the head and excitability had left. She

stated that she felt in a perfect state of bliss compared to her previous condition.

The cessation of the vomiting was permanent, and that of the pain in the head nearly so. The fulness of the pulse remained for some hours. On the following day it had diminished in volume, and was at the normal state.

This is an instance in which I have observed, after compressing the vagus, a permanent change in the state of the pulse, and I much regret not having had a sphygmograph at hand to copy its exact condition. This subject I intend to examine thoroughly on a future occasion.

In this case, as in the preceding, vagal pressure immediately quieted the violent vomiting, which had previously been going on for some hours, and it is to be remarked that in both instances there had previously existed a state of gastritis.

The results obtained in cases of sea-sickness led me to hope that by this means we might combat obstinate sea-sickness, and I have some expectation that it might be efficacious in this affection, although I have not obtained as yet any decisive proof on the subject. On applying it on myself—I must premise the statement that I am a complete martyr to sea-sickness—the last time I passed from Ostend to London, at night, when in the berth, I found nausea already commencing; pressure on the vagus produced sleep on two occasions, and I was enabled to escape the enemy by this indirect influence of vagal pressure.

Dr. Parry has already remarked its influence in producing sleep in cases of restlessness, where there is mental excitement, and what is termed “the fidgets.” It is particularly efficacious in cases where one pervading idea of an annoying nature occupies the mind, which cannot be dispelled, but is rather intensified by any attempt to dispel it. Under such conditions the influence of vagal compression is most heroic. Even if sleep is not procured, if once we induce a sense of faintness by vagal pressure, it seems to act as a sponge passed over writing on a slate, either removing this one ideal state, or bringing the intensified idea on a level with the others. I have repeatedly verified this effect on myself and other persons, by comparing the state of the mind before and after vagal compression.

In cases of mania, where the mind is trembling on the limits of unreason and reason, I have a strong conviction that the nervous shock caused by vagal pressure would, either alone or in combination with other agencies, be productive of the most happy results.

CASE VIII.—C. B——, aged 25, had suffered from a severe attack of acute rheumatism, which had lasted for about two months, having successively invaded all the large joints, the hands, and the feet. Several times during apparent convalescence the disease reappeared, making a fresh attack on all the joints before showing any signs of abatement. The heart and its membranes throughout the illness had remained intact, until one night the most violent disturbance of the heart's action occurred, accompanied with pain and extremely rapid and tumultuous pulse. She was in the most violent agitation and fear of immediate death, with fits of crying, but no other signs of hysteria then or during any of the time I had known her previously.

After applying a large mustard plaster to the præcordium without any benefit, I tried compression of one vagus at first, and afterwards of both at once. The sedative effect was most remarkable; in the course of a few minutes the agitation had subsided, the heart's action became quieter and more regular, and finally all the nervous symptoms subsided. A few minutes afterwards she sank into a steady sleep, and on awaking was perfectly quiet, and the cardiac symptoms never reappeared.

As a strong perturbing agent we may occasionally employ compression of the vagus with great advantage.

CASE IX.—Miss S—— had been suffering from hemicrania, recurring periodically every day for several months. During the attacks, the temporal region, the face, and the eye were especially affected; there was most severe pain, with extreme susceptibility to the light, much redness of the conjunctiva, and flow of tears. During several months the young lady had been subjected to the action of the antiperiodic remedies, such as quinine, iron, &c., with occasional amendment, never of a durable nature. One or two suspicious teeth had been extracted without any advantage. Amongst the numerous local remedies, galvanism over the various ramifications of the trigeminus and other painful branches down the neck during the intermission afforded some relief.

The general health becoming much affected, as evidenced by the loss of flesh, impaired digestion, occasional faintness, and a constant air of suffering, it was determined to try the effect of a strong perturbing action on the system; in which I was the more encouraged, as in a case of intermittent fever of upwards of two years standing (in spite of all the means employed for the cure of the patient) an immediate and effectual cure had been produced by the patient's fall from his horse into a canal while riding across the country.

Miss S——, while seated in the presence of Dr. Berney, of Rolle, Canton de Vaud, had the two vagi strongly compressed. An immediate state of syncope, with resolution of all the voluntary muscles and apparent insensibility, ensued. Notwithstanding the alarm of some members of the family present, as the respiration and the heart's action were regular we did not allow her to be disturbed in the slightest degree, but remained watching during two hours; not the slightest voluntary movement was executed. At the end of this time the patient gradually regained consciousness and motor power, when she was conveyed to bed.

It is of course impossible to say how far the insensibility would have resisted the various irritants that might have been employed to test it, as the object of Dr. Berney and myself was to leave her completely undisturbed. As far as the patient was concerned, she was perfectly unconscious of what passed from the beginning to the end.

The result was that from that time to the present date—upwards of two years—she has not had the slightest return of a paroxysm, and has completely regained her flesh and colour.

A FURTHER CONTRIBUTION TO THE TREATMENT OF TRAUMATIC TETANUS.

BY EBEN WATSON, M.D.

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Royal Infirmary, Glasgow.*

I HAVE just concluded the treatment of a case of traumatic tetanus, which teaches so many important lessons for our guidance in future that I desire shortly to relate its chief features—a not unfitting appendix to my former paper in the *Practitioner* for September 1869.

The subject of the case was a strong young workman, 27 years of age, who trod on a rusty nail fixed in a plank, so that the nail ran up into his foot, inflicting a very painful wound. This happened on the 1st of December, 1869. He pulled out the nail, and by the direction of a surgeon applied a poultice, under which the wound rapidly healed; but on the 11th of the same month he began to feel stiffness in his jaw, neck, and shoulders, and this rigidity had extended to his whole body by the third day thereafter, viz. on the 14th December, when he was admitted, under my care, into the Royal Infirmary.

I need not give the daily reports which were carefully made by my house surgeon, Mr. Allan, in the journals of the infirmary. It will suffice for my purpose to state that, with the exception of an occasional purgative and appropriate diet, he took no other drug but the Calabar bean.

I must, however, call attention to the manner in which this drug was administered. It was not slavishly given in certain quantities and at certain times; but I had the patient watched day and night by my house surgeon, or some of the other assistants resident in the infirmary, and by non-resident dressers, who took the duty by turns. I could thus direct the treatment intel-

ligerly from hour to hour according to the patient's state. We soon established the fact that it required two grains of the alcoholic extract of Calabar bean to produce any good effect in this case, and that dose was given in solution as a weak tincture; but the intervals of administration were very various. At the height of the disease, and during its many exacerbations, I frequently ordered the above dose to be repeated every quarter of an hour for three or four times till relaxation was produced, which it never failed to be; and then the usual intervals of half an hour or a whole hour were resumed.

Again, sometimes his stomach rejected the drug, it being squirted up violently rather than vomited. On these occasions I directed that double the quantity should be given by injection into the rectum, and for this purpose a solution of the extract in starch water was employed with success. I may mention here, that in this and other cases I have employed the method of subcutaneous injections, but in my hands they have not produced any very decided or reliable effect.

But the important *new fact* which this case establishes is the freedom with which the drug may be used in such cases, and of this I shall give some idea by the following epitome.

The whole duration of the disease, from its commencement to its cure, was forty-six days, and of these he was under treatment by the Calabar bean for forty-three. During these days he took the following enormous quantities of the extract.

During the first three days and nights he took twenty-three grains of the extract, in rapidly increasing quantities; thus he took two grains during the first twenty-four hours, eight grains during the second, and thirteen during the third such period. These doses merely sufficed to keep the disease in check. They never produced decided relaxation.

I then employed a very pretty tincture made by percolation and obtained in Edinburgh, but it did not seem strong enough for our case in the doses ventured upon (℞x to xx); I therefore gave it up in a few hours, because no one can be certain of its exact strength, and I returned to the tincture of the extract mentioned above.

For the next seven periods of twenty-four hours, he took in each period sixteen grains of the extract; then the quantity was

increased to forty-eight grains in twenty-four hours ; and in the next twenty-four hours to fifty-seven grains. Next day and night he was easier, and took only forty-two grains ; but next he was again worse, and took the very large quantity of seventy-two grains. He did not lose any part of these doses, but took them all by the mouth and retained them. They were all needed to keep him only moderately relaxed, and it is noteworthy that no disagreeable effect was produced by the bean, but its action in relaxing the rigid muscles was quite obvious.

Next day and night the quantity used was forty-eight grains, then forty-four, then thirty, then twenty-four ; but, apparently owing to a strange obstreperousness in his behaviour, as for instance his insisting upon coming out of bed and lying on the floor, he became worse, and required the bean to the amount of fifty-four grains during the next twenty-four hours. This, however, had a disturbing effect on his heart, which became tumultuous in its action. He was likewise very sick and pained in his bowels ; hence for a few days the bean was given by injection into the rectum, as was formerly mentioned. However, he gradually improved, so that the quantity of the bean given was soon diminished to thirty grains, then to twelve, then to six, once more rising to twelve grains for one day, and again falling to four, and finally the drug was stopped altogether on the 26th of January, and I am glad to add that the man is now perfectly well, and fast recovering the strength he had lost in his fearful struggle for life.

A curious circumstance remains to be told, not connected with the Calabar bean, viz. that after the man's recovery a small suppuration took place in the foot at the seat of the original injury, and when this was opened a small bit of leather was extracted. This was evidently part of the sole of the boot, which had been carried into the foot on the point of the nail, and remained there till it excited suppuration and was expelled. I have wondered if the presence of this irritating substance was the cause of the protracted nature of this case, and if it would have been more easily and more speedily cured had it been extracted sooner. No doubt the practice of formal incisions with the view of dividing the nerves of the wounded part have failed to arrest tetanus once it has been established ; but as many such cases

present themselves with the wound thoroughly cicatrized, it may be questioned whether it might not be good practice to cut through the cicatrix so as to explore it and make sure that no foreign matter was imbedded beneath it. The very incision might relieve irritation, and at all events could do no harm. I would recommend that this should be borne in mind by surgeons, as a practice authorized by the present case, wherever there is the slightest possibility of foreign matter being enclosed within the cicatrix of a wound causing tetanus.

But to return for a moment, in conclusion, to the main object of this paper : I beg to press on the attention of my professional brethren the safety of a very full and free administration of the Calabar bean in traumatic tetanus, if only two conditions be fulfilled: viz. 1st, That the patient be well and intelligently watched, so that the drug be given really as often and as much as the patient requires at the time ; 2d, That his strength be well supported by fluid nourishment and stimulants. Now, the relaxation produced by the bean enables the patient to swallow fluid food, and therein consists its superiority to all other relevants, such as chloroform and chloral for instance, which prevent the taking of food. I am encouraged to hope that, given as I have directed, the Calabar bean may yet be found as certain in the cure of tetanus as strychnine is in its production.

I may add that, in the treatment of this case, not less than 1026 grains of the alcoholic extract of Calabar bean were, one way or another, introduced into the patient's system ; and if each grain of the extract is equivalent to sixteen of the powdered bean, the quantity given would represent fully thirty-four ounces of the latter. As the beans, on an average, weigh about sixty grains each, it would take 272 beans to yield the requisite quantity of the powder, but I suppose that more than these would be actually consumed in the preparation, as the rind would have to be excluded.

OBSERVATIONS ON THE PHYSIOLOGICAL ACTION OF VERATRUM VIRIDE.

BY CHARLES SQUAREY, M.B. LOND.

THE following observations on the physiological action of this drug were made with the view of confirming the results obtained by Oulmont.

From observations and experiments made on man, dogs, rabbits, and frogs, Oulmont found that this drug affected chiefly the digestive, respiratory, and circulatory systems, causing, very shortly after it was administered, nausea, vomiting, diarrhœa, and rapid diminution in the number of respirations, and in the pulsations of the heart. In those cases in which poisonous doses were administered the vomiting and diarrhœa were excessive, but no inflammatory lesions were discoverable at the post-mortem examinations.

The most remarkable effect of the drug, though, was its power of reducing the temperature of the body, which in some of the cases was noted to fall, in from an hour and a half to two hours after administration, two, three, or five degrees, and to remain so reduced for twenty hours or so. It was to test this latter point especially that the following observations were made. They differ from those of Oulmont in this respect. He used a resinous extract obtained from the *veratrum viride*, whilst in the following the tincture was employed. No experiments were made on animals. Patients were chosen in the hospital in a state as nearly approaching to health as possible, and to them the drug was administered in increasing doses till a marked effect was obtained. I must here beg to thank Drs. Reynolds and Wilson Fox, by whose kindness I was enabled to carry out these observations.

In each case the patient was put on a stated diet, and kept in bed for a day or two previous to the administration of the drug,

and their temperature and pulse noted as often as possible throughout the day, in order that a knowledge of their normal temperature and pulse might be obtained with which to compare those observations taken after the exhibition of the drug.

The following is a short account of each case:—

CASE I.—C. Y——, aged 45, widow. Admitted into University College Hospital suffering from symptoms of false angina pectoris, the pain and spasm coming on once and sometimes twice in the course of the day; says that she has been so suffering for the last nine months. On examining the heart the impulse was felt beating in the normal position, the area of dulness not increased. The sounds weak, short, the second somewhat accentuated at the base. At the second L. cartilage a distinct systolic murmur was audible. The contractions of the heart very irregular.

Her general condition was fairly good. Body fairly nourished; the tongue moist and slightly furred; the appetite not very good; the bowels generally acted two or three times daily.

After being in the hospital for about a week, during which no change in her condition took place, the following observations were made (see next page), the temperature and pulse being taken for three consecutive days before any *veratrum viride* was administered.

On comparing these tables it is seen that the pulse was very soon affected by the doses given, but that no fall of temperature worthy of note took place. On the 28th of November, after a second dose of 20 minims of the tincture had been given, the pulse fell within two hours from 10 to 20 beats in the minute, and continued so for about two hours; and on again rising to about 60 beats to the minute at 7.30 P.M., was by another dose of 20 minims reduced within an hour again to 50, the temperature all the time remaining the same.

On the 30th the medicine being given in the same way, corresponding results were again observed.

On the 1st of December one dose of 40 minims was given. This reduced the pulse in an hour about ten beats, and for the whole day till 4 P.M. the pulse remained about 20 beats below the average of those days when no medicine was given. The temperature not altered at all.

CASE I.

Date.	Time.	No. of Observations.	Range of Temperature	Range of Pulse.	Remarks.
Nov. 25.	9 a.m. to 12 a.m.	14	98.4 to 99.2	62 to 72	No medicine given.
	2 p.m. „ 4 p.m.	13	98.6 „ 99.4	90 „ 98	
Nov. 26.	9 a.m. „ 12 a.m.	18	98 „ 98.4	60 „ 72	No medicine given.
	2 p.m. „ 4 p.m.	12	98.4 „ 99	61 „ 80	
	6 „ „ 9 „	11	98.4 „ 98.8	66 „ 78	
Nov. 27.	10 a.m. „ 12 a.m.	13	98.4 „ 98.6	62 „ 70	No medicine given.
	2 p.m. „ 4 p.m.	14	98.4 „ 98.6	66 „ 78	
	6.30 „ „ 9 „	12	98.6 „ 98.8	64 „ 76	
Nov. 28.	9 a.m. „ 12 a.m.	10	97.4 „ 98.2	60 „ 74	20 minims tinct. veratrum viride given at 10 a.m.
	1 p.m. „ 2 p.m.	3	98.2 „	72	
	2 „ „ 3 „	6	98.2 „ 98.8	60 „ 64	
	3 „ „ 4 „	3	98.8 „	64 „ 54	Medicine at 2 p.m.
	4 „ „ 5 „	7	98.8 „ 99	50 „ 56	
	6.30 „ „ 7.30 „	4	98 „	56 „ 60	
	7.30 „ „ 8.30 „	4	98 „	58 „ 54	
	8.30 „ „ 9.30 „	4	98 „	54 „ 50	
	9.30 „ „ 10 „	2	98 „	50 „ 54	
	9.45 a.m. „ 10 a.m.	2	97.4 „	64 „ 60	20 minims tinct. veratrum viride given at 9.30 a.m.
	10 „ „ 11 „	7	97.4 „ 97.8	58 „ 56	
	11 „ „ 12 „	7	97.8 „	56 „ 50	
Nov. 30.	9 „ „ 10 „	4	98 „ 98.4	68 „ 70	20 minims tinct. veratrum viride given at 9.30 a.m.
	10 „ „ 11 „	6	98.4 „ 98.6	58 „ 68	
	11 „ „ 12 „	6	98.4 „	62 „ 70	
	2 p.m.	Medicine given.
	3.30 p.m. „ 4 p.m.	4	98.2 „ 98.4	52 „ 50	
	4 „ „ 5 „	6	98.4 „	48 „ 56	
	6.30 „ „ 7 „	3	98.4 „	68 „ 70	Medicine given.
	7 „ „ 8 „	
	7 „ „ 8 „	6	98.4 „	70 „ 58	
	8 „ „ 9 „	4	98.4 „	58 „ 48	Faint, retching.
Dec. 1.	9 „ „ 10 „	7	98.4 „	52 „ 44	Faint, sick.
	10 „ „ 11 „	5	98.4 „	50 „ 52	Feels better.
	9.30 a.m. „ 10 a.m.	4	98.4 „ 98.6	60 „ 64	40 minims tinct. veratrum viride given at 10 a.m.
	10 „ „ 11 „	6	98.6 „ 98.8	64 „ 62	
	11 „ „ 12 „	7	98.8 „ 98.6	60 „ 52	
	1.50 p.m. „ 3 p.m.	7	98.4 „ 98.8	58 „ 54	Faint and sick.
	3 „ „ 4 „	7	98.8 „ 98.6	54 „ 58	
	8 „ „ 9 „	4	98.4 „	66 „ 76	
	9 „ „ 10 „	5	98.4 „	68 „ 72	
Dec. 2.	9 a.m. „ 10 a.m.	5	98 „ 98.6	64 „ 72	60 minims tinct. veratrum viride given at 10 a.m.
	10 „ „ 11 „	8	98.4 „ 98.6	72 „ 60	
	11 „ „ 12 „	8	98.4 „ 98.8	60 „ 42	
	12 „ „ 1 p.m.	7	98.6 „ 99.2	42 „ 54	
	1 p.m. „ 2 „	6	99.2 „	46 „ 54	
	2 „ „ 3 „	6	99.2 „	60 „ 66	
	3 „ „ 4 „	4	99 „	64 „ 70	
	8 „ „ 10 „	8	98.6 „	68 „ 76	
Dec. 3.	9 a.m. „ 12 a.m.	17	98 „ 98.8	66 „ 72	No medicine given.
	2 p.m. „ 4 p.m.	13	98.6 „ 99.2	66 „ 76	
	8 „ „ 10 „	9	98 „ 99	66 „ 80	

On December 2, 60 minims of the tincture were given at 10 A.M. From 9 A.M. till 10 A.M. the pulse ranged between 64 and 72. One hour after the medicine had been taken the pulse began to fall, being between 11 and 12 A.M. as low as 42 beats

in the minute, and it continued ranging between 42 and 54 till 2 P.M., and then gradually rose again to the normal rate at 4 P.M., it being about 70.

The temperature this day was slightly higher than on the previous days.

CASE II.—E. G.—, aged 18 years, nursemaid. Admitted into University College Hospital, suffering from anæmia and amenorrhœa. On admission patient suffered much from shortness of breath and palpitation of the heart.

After being in the hospital some little time, and her general condition being much improved, the following observations were made :—

Date.	Time	No. of Observations.	Range of Temperature.	Range of Pulse.	Remarks.
Nov. 28.	9 a.m. to 12 a.m.	19	98·8 to 99·2	92 to 100	No medicine given.
	1.30 p.m. „ 4.30 p.m.	13	98·4 „ 98·8	88 „ 96	
	8 „ „ 10 „	9	99	92 „ 100	
Nov. 29.	9 a.m. „ 12 a.m.	15	98·6 „ 99	88 „ 100	No medicine given.
Nov. 30.	9 „ „ 9.30 „	4	98·8 „ 99	90 „ 100	15 minims tinct. veratrum viride given at 9.30 a.m.
	9.30 „ „ 11 „	8	99 „ 99·2	98 „ 84	
	11 „ „ 12 „	7	99 „ 99·2	88 „ 72	
	3 p.m. „ 4 p.m.	6	99	80 „ 86	
	4 „ „ 5 „	6	99 „ 99·2	76 „ 86	
	6.30 „ „ 7.30 „	6	99·2	86 „ 92	
	7.30 „ „ 10 „	10	99·2	82 „ 88	
Dec. 1.	9 a.m. „ 9.30 a.m.	4	98·8 „ 99	88 „ 92	30 minims tinct. veratrum viride given at 9.30 a.m. Feeling sick and faint. Feeling better; sickness stopped.
	9.30 „ „ 10.30 „	8	99·2	92 „ 80	
	10.30 „ „ 11.30 „	6	99·2 „ 98·8	80 „ 56	
	11.30 „ „ 12 „	3	99·8	56 „ 60	
	2 p.m. „ 3 p.m.	7	98·2 „ 98·6	58 „ 66	
	3 „ „ 4 „	7	98·4	66 „ 78	
	8 „ „ 10 „	9	99	80 „ 90	
Dec. 2.	9 a.m. „ 10 a.m.	6	98·4 „ 98·8	88 „ 94	45 minims tinct. veratrum given at 10 a.m. Slight headache. Feeling sick. Vomiting and retching. Appetite gone. Not sick, head better. Feeling better. Feeling very well.
	10 „ „ 11 „	6	98·4 „ 98·8	88 „ 70	
	11 „ „ 12 „	6	98·8 „ 99·2	58 „ 72	
	12 „ „ 1 p.m.	6	98·8 „ 99	52 „ 72	
	1 p.m. „ 2 „	6	99·2	54 „ 56	
	2 „ „ 3 „	6	99·2	58 „ 70	
	3 „ „ 4 „	5	99·2 „ 99·4	60 „ 68	
	8 „ „ 10 „	8	98·2 „ 98·6	64 „ 74	
Dec. 3.	9 a.m. „ 12 a.m.	17	98·8 „ 99·4	82 „ 92	No medicine given—feels well. Feels well. Feels well.
	2 p.m. „ 4 p.m.	15	99 „ 99·4	88 „ 96	
	8 „ „ 10 „	9	99 „ 99·4	88 „ 94	

Three doses of the tincture were given—

On November 30th, 15 minims at 9.30 A.M.

„ December 1st, 30 „ „ 9.20 A.M.

„ December 2d, 45 „ „ 10 A.M.

The dose of fifteen minims on the 30th did not have much effect on the pulse, but the thirty minims given on the 1st, and the forty-five minims given on the 2d, reduced most distinctly the pulse, the medicine taking effect about an hour and a half after it had been administered.

CASE III.—S. W.—, aged 48 years. Admitted, complaining of heating sensation in the abdomen, which at times gave rise to much uneasiness and to occasional vomiting. The pulsations of the abdominal aorta most distinctly felt in the epigastric region. No enlargement of the vessel. Heart healthy. Appetite fairly good. Bowels open daily.

In this case two doses of twenty and forty minims of the tincture were given on the 6th and 7th of December—the smaller dose producing a slight, and the larger one a most marked diminution in the number of the beats of the pulse, within two hours of taking the medicine. In this case, as in the others, the temperature is not in the least altered.

Date.	Time.	No. of Observations.	Range of Temperature.	Range of Pulse.	Remarks.
Dec. 4.	11 a.m. to 12 a.m.	6	98.6	68 to 72	No medicine given.
	2 p.m. „ 4 p.m.	13	98.2 to 98.8	72 „ 78	
	8 „ „ 10 „	6	98.2 „ 98.6	68 „ 74	
Dec. 5.	9 a.m. „ 12 a.m.	15	98.2 „ 98.4	66 „ 74	No medicine given.
	10 p.m.	1	98.4	72	
Dec. 6.	9 a.m. „ 10 a.m.	7	98.4 „ 98.6	64 „ 68	20 minims tinct. veratrum viride given at 10 a.m. Feeling weak and faint. Feeling better.
	10 „ „ 12 „	12	98.6 „ 98.8	64 „ 68	
	2 p.m. „ 3 p.m.	6	98.6 „ 98.8	60 „ 56	
	3 „ „ 4 „	6	98.8 „	56 „ 62	
Dec. 7.	9 a.m. „ 10 a.m.	6	98	60 „ 66	40 minims tinct. veratrum viride given at 10 a.m. Feeling very sick and faint. Cannot take any dinner. Sick and faint. Feeling better—sleepy. Slight headache. Feeling comfortable.
	10 „ „ 12 „	13	98 „ 98.4	60 „ 70	
	12 „ „ 2 p.m.	
	2 p.m. „ 3 „	6	98 „ 98.4	48 „ 52	
	3 „ „ 4 „	8	98.4	50 „ 56	
	4 „ „ 5 „	7	98.4	54 „ 64	
	8 „ „ 10 „	12	98	58 „ 64	
Dec. 8.	9 a.m. „ 12 a.m.	15	98 „ 98.8	58 „ 64	No medicine given.

CASE IV.—G. B.—, aged 18 years. Admitted into University College Hospital, having a temperature of 104° F. Pulse intermittent and irregular. The day after admission his temperature was normal; the pulse as before, and he expressed himself as feeling very well. No uneasy sensation about heart. Has

always been strong and healthy, and as long-winded as any of his mates.

From this patient's anxiety to leave the hospital, only one observation was made. On the 21st his temperature and pulse were taken frequently, no medicine having been given, and on the 22d thirty minims of the tincture of veratrum viride were given with exactly the same results as in the previous cases, as will be seen by reference to the following table:—

Date.	Time.	No. of Observations.	Range of Temperature.	Range of Pulse.	Remarks.
Dec. 21.	9.30 a.m. to 12 a.m.	12	98 to 98.6	58 to 66	No medicine given.
	1.30 p.m. „ 3.30 p.m.	12	97.6 „ 98	56 „ 62	
	9 „ „ 10 „	6	98	56 „ 60	
Dec. 22.	9 a.m. „ 10 a.m.	6	97.8	58 „ 64	30 minims tinct. veratrum viride given at 10 a.m.
	10 „ „ 12 „	13	97.8	58 „ 64	
	1.30 p.m. „ 2 p.m.	3	97.8	46 „ 48	
	2 „ „ 4 „	6	98	46 „ 50	
	9 „ „ 10 „	4	98	56 „ 60	

These observations do not confirm Oulmont's statement with regard to the power of the drug to restore the temperature of the body. In every case it is seen that no alteration of note has taken place in the temperature, although in each case sufficiently large doses were given to reduce the pulse most markedly.

They agree, however, with Oulmont's in every other respect. Nausea and vomiting were produced in every case where more than twenty minims were given at one dose, and in one case there was a little diarrhoea. The respirations were also reduced in number, corresponding with the pulse, and in all the cases there was a sensation of great weakness and general loss of power when fully under the influence of the drug.

Veratrum viride seems to act especially on the heart, to be a very powerful cardiac poison, analogous to digitalis, but much more rapid in its action.

BELLADONNA AS AN APERIENT IN CONSTIPATION.

BY F. B. NUNNELEY, M.D.

ALTHOUGH constipation is such a common complaint and a source of so much annoyance, it is scarcely regarded by persons generally as a disease requiring medical aid; yet numerous popular remedies are resorted to for its relief, comprising all known purgatives, often in considerable doses. From time to time these are repeated, in many cases acting as only temporary palliatives, until at last some aperient preparation has to be taken from one to three times a week to ensure as many as two or three evacuations in this time.

It is not intended to enter into the wide subject of the causes and treatment of constipation, but only to offer a few remarks on its *medicinal* treatment by means of belladonna, from observations made, for the most part, on patients of the York Dispensary, where I gave it to nearly all those who suffered from constipation, simply to restore the natural action of the bowels, and not to cause a flow of secretion from the intestinal mucous membrane. The method followed was, in the main, that recommended by Trousseau. Extract of belladonna was given in doses of gr. $\frac{1}{8}$ to gr. $\frac{2}{3}$ on rising every morning. A grain of the extract and gr. iij. of the extract. gentianæ were divided into six pills, and one to four prescribed for a dose.

On analysing the cases of constipation, both recent and of long standing, it was found that the greater number were associated with dyspepsia, and especially with that form presenting more or less the characters of gastric irritation, in which the tongue was thinly furred, with prominent red papillæ at the tip, and in which there was tenderness at the epigastrium, pain, especially after food, and often more or less headache. Patients with these symptoms presented themselves with a history of inactive bowels for several months or years, often stating that

they were obliged to take aperient pills, senna, castor-oil, &c., once or twice a week to produce an evacuation. The ages of those patients varied from twenty to sixty years of age, the majority lying between twenty-six and fifty. To these belladonna was given for from one to three weeks. It nearly always caused an evacuation, usually of solid stools, after breakfast on the morning on which it had been taken. Generally the bowels continued regular after the belladonna was discontinued, and sometimes headache was greatly mitigated. In one case, the patient, a woman, aged forty-seven, had had constipated bowels for twenty-six years, for which she had taken pills or castor-oil once a week. Belladonna restored the natural daily action in fourteen days. In a few cases no permanent cure was effected, but relief could be obtained by taking belladonna every second or third day, the dose had not to be augmented, and no increased constipation followed its use.

In more recent cases the natural action of the bowels was restored in a few days: thus a man had taken pills every other day for five weeks, but the bowels acted naturally after taking belladonna for six days.

Treatment was specially directed to the dyspepsia in all cases, but no aperient except belladonna was given, and frequently not this, until the effect of regulated diet and habits, and of general treatment, had been observed.

The remaining cases of constipation occurred in very various diseases. Most often belladonna acted as an ordinary aperient when given in the manner before stated, and its use had not to be continued more than from one to three weeks to cure the constipation. Rarely, it produced no effect even in doses of gr. $\frac{1}{2}$ to gr. j, except causing dryness of the throat: such a failure occurred in the third stage of phthisis.

Belladonna in the usual dose of gr. $\frac{1}{6}$ to gr. $\frac{1}{2}$ produced no dryness of the throat, or dilatation of the pupil, but presented the following advantages over ordinary purgatives:—It did not gripe but gave usually a healthy solid stool, increased constipation did not follow its use, and it very often restored the natural action of the bowels, so as to render a recurrence to this or other aperient unnecessary. Another and important advantage is the small bulk in which the remedy can be given.

ON THE DIETETIC AND MEDICINAL USES OF WINES.

BY THE EDITOR AND STAFF.

PART I. ON THE PLACE OF WINES IN THE DIET OF ORDINARY LIFE.

IN commencing a series of papers on the uses of Wines in health and in disease, we must briefly define the intended scope of our inquiry, in order to avoid misunderstandings. In the first place, it is no part of our object to discuss the question of the lawfulness or the advisability of using alcoholic liquors in general, either as food or as medicine; we shall take it as established, both by wide-spread custom and by the most recent physiological research, that alcohol, as such, has its legitimate place in the sustentation both of the healthy and of the diseased organism. Nor shall we occupy space with the re-assertion of the doctrine, already repeatedly laid down in the pages of this journal, of the absolutely different effects respectively produced by the moderate and by the excessive use of this class of drinks. It is our intention to deal specially with Wines as such; to show that the whole group of these beverages has common properties and uses that separate it from other alcoholic liquids, and further, that among wines themselves there are very numerous differences, of which many are probably not yet understood either by the public or even by the majority of medical men. We can hardly be mistaken in the latter assertion, sweeping though it seems; since not only is it common to meet with invalids and others who have received diametrically opposite directions as to the choice of beverages from different practitioners of equal standing, but we have observed after a pretty close study of this subject, extending over more than thirteen years, that hasty generalizations, which will not bear sifting, are almost as common in the pages of recent as of older writers on this topic. One part of our knowledge has, indeed, of late made solid, though limited advances—viz.,

the chemistry of wines. But the far wider question of their choice and practical uses is still in the most uncertain state ; and it must be confessed that recent literature on the subject, though it may have cleared away some gross misconceptions, has almost neutralized this benefit by fostering the growth of new prejudices which are scarcely less unfounded than the old ones. And there is one aspect of the new discussions upon which, though we would willingly ignore it, our duty compels us to animadvert with plainness ; we mean the influence of commercial motives. We are not imputing conscious dishonesty to the writers even of the most objectionable of the many trade circulars which have been published under the guise of scientific pamphlets on wine ; but it is only too obvious to those who are at all behind the scenes that commercial bias has in several instances assisted powerfully in the development of exclusive dogmas which, from a scientific standpoint, must be regarded as capricious and absurd. It may perhaps be necessary, hereafter, to illustrate this with some particularity ; at present it will be enough to adduce an instance which is so common that our criticism of it can scarcely inflict the sting of personal reproach ; we refer to the clamour for the exclusive use of particular “natural” or “unfortified” wines. Doubtless this cry represents a natural, and on the whole a wise, reaction from certain stupid and pernicious routine habits of English life ; but it has been largely fostered and exaggerated by traders and by a certain class of scientific men, in a manner which scarcely corresponds with the idea of disinterestedness, unless we are to suppose that their enthusiasm is strongly leavened with ignorance.

To a medical writer on wines there are several inducements to attack the subject first from the side of the medicinal uses of these drinks ; the strongest reason being that, from the nature of his daily experience, he is most familiar with this aspect of the question. We prefer, however, to start from the view of wine as a beverage of ordinary life ; being persuaded that the subject can only be fairly examined in this way. It is no doubt true, on the one hand, that a complete statement of the physiological action of wines cannot, in the present state of science, be given ; and, on the other hand, it may be urged that if empirical experience is to be our guide, the circumstances of sickness offer a guarantee for closer and more accurate obser-

vation of the phenomena than can be expected when wines are used as a mere beverage of the healthy. To this argument we believe there is one conclusive reply—that there is no such clear line between health and disease as is assumed in common speech; that the foreshadowings and faint images of disease are to be seen in sundry incidents of the life of those who are conventionally regarded as healthy; and that it is in the study of these “natural diseases” (if we may use such a phrase), and their relations to the dietary remedies which general custom, independently of medical authority, has prescribed for them, that we are most likely to discover a reasonable basis for the use of these remedies in diseases which involve extensive and obvious departures from the standard of health. It need scarcely be said that alcoholic drinks, rightly or wrongly, are the commonest of all household remedies for a large number of paltry ailments; and one of the first things which we wish to demonstrate is the prominent fitness of wines, above other alcoholic drinks, for all legitimate purposes of this kind. Accordingly, we shall in the first place very simply sum up the composition of wines, as a class; and also the main distinctions between the principal kinds.

1. In the first place, we have to consider wines as alcoholic fluids; and we must remind our readers of the elementary facts as to their relative strengths as compared with each other, and with other kinds of alcoholic drinks. It will be enough for the present to say that the *strong* wines, including port, sherry, Madeira, Marsala, and all that genus, contain on the average something like 17 per cent. of absolute alcohol (the strongest ports ranging as high as 23 per cent. or more), and that the *light* wines, including claret, burgundy, champagne, Rhine and Moselle wines, Hungarian wines, &c., average between 10 and 11 per cent. of absolute alcohol (the lightest champagnes not containing more than 5 or 6 per cent.). Comparing wines with beers, we may note that the poorest sorts of beer contain about 2 per cent. of absolute alcohol; ordinary table ale, as drunk in most middle class households, about 3 per cent.; ordinary porter between 3 and 4 per cent.; stout from 5 to 6 per cent.; while the strongest kinds of malt liquors range through various degrees up to even 10 per cent.; and a common strength for good bottled ale or stout is about 7 per cent. of absolute alcohol.

On the other hand, good brandies and rum average between 45 and 50 per cent. The above rough averages are only drawn with a view to place before the reader a standard of comparison by the help of which he may realize somewhat more accurately than is usually done, even by medical men, the comparative alcoholic potency of beverages which are so commonly recommended in an offhand and careless fashion. For instance, let us take the very common case of a lady, not exactly ill, but delicate, and "needing generous living," who takes "three or four glasses of port wine a day." Now, it need hardly be said that wine glasses vary greatly in size, and that of late years there has been a marked tendency to make them larger than formerly; but we will take the moderate average of two ounces for a port glass: then four of these will contain 8 ounces of wine, which, on the supposition that the liquor is of a fair age and quality, will represent $1\frac{1}{2}$ ounces of absolute alcohol, or the alcoholic equivalent of 50 ounces (five large tumblers) of table-beer, or 3 ounces of good brandy, or two-thirds of a bottle of a generous claret or Rhine wine. Or to put the comparison in another practical form (still avoiding the nuisance of a dry tabular statement) we may say that a bottle of twelve glasses of average port is equal, in alcoholic strength, to rather less than half a bottle of brandy, or two bottles of good claret or hock, or nearly a gallon of table-beer or of light champagne. Now, it would be easy to make a somewhat sensational point, by showing that the by no means unusual allowance for ladies who are at all "delicate" of two glasses of port or sherry at lunch, and the same quantity at dinner daily, makes up the alcoholic equivalent of a bottle of brandy every week, which looks rather shocking on paper. But apart from the question whether such an allowance is excessive or not, we would insist on the value of this kind of comparison, as tending to show very distinctly that the place of the stronger wines is rather among the cordials, to be used under express and careful medical sanction, than among the beverages of common life, since it is plain that a very little carelessness in their use may lead to actual excess. The daily allowance above mentioned includes an amount of absolute alcohol which our own experimental researches have shown to be about the limit of what can be habitually taken by persons leading a not very active life,

without provoking symptoms of chronic malaise indicative of actual alcoholic poisoning.

It is otherwise with the class of light wines, speaking in the broadest sense; wines, namely, that average no more than ten per cent. of alcoholic strength. So far as alcoholic strength is concerned it may be said in general terms, that half a bottle a day of such wine for a sedentary, and a bottle a day for a vigorous and actively employed adult, affords a reasonable and prudent allowance of alcohol; and this quantity of wine, either alone or with water, will be enough to satisfy the needs of moderate persons for a beverage at lunch and dinner, the only two meals at which alcohol should, as a rule, be taken.

We have put this question of the absolute alcoholic allowance for healthy adults in a somewhat crude and abstract form, not undesignedly; for we wish to compel the upper and middle classes, and their medical advisers, to look the facts of alcoholic consumption honestly in the face. No one who is at all conversant with the habits of the wine-drinking classes will deny that such a daily allowance of alcohol as we have above mentioned is distinctly within the average consumption of persons of moderate habits as the ways of society go; and indeed we fear that a good many persons will characterise it as utopian in its standard of temperance. It is therefore well to remember, that the same quantity of alcohol, represented in beer, makes up between two and three pints; and that a labouring man who exceeded this daily allowance would certainly fall under the ban of conventional moralists as "intemperate." It would probably be a surprise to many worthy philanthropists, if they chanced to read this paper, to find themselves placed so nearly on a level with Hodge the carter, who reprehensibly fuddles himself with "t'other pint." But in fact the matter is stronger than this: and for once we must beg leave to drop the conventional theory of educated manners, and describe plain facts. It is true that there has been a real advance towards temperance of late years, and that intoxication has become a monstrous exception among the cultivated classes. But we may appeal to any medical man with a knowledge either of metropolitan or of provincial society as to the accuracy of the following computation. We shall admit, in the first place, that there are many men, and very many women, who drink almost

no alcohol. But the greater number of men, and a large number of women, of the middle and upper ranks habitually take a daily allowance of alcohol far larger than that above indicated. We purposely leave out of sight the reckless "fast" men who are perpetually "nipping" at bitters or absinthe, or "setting themselves right" with just another "brandy and soda," and also the miserable women—whose numbers none but the doctors even faintly suspect—who indulge in secret dram-drinking. Excluding all such persons from our reckoning, let us merely consider the case of the moderate diners-out, and the virtuous dancing young ladies. The former will certainly take on the average eight ounces of strong wines, and twelve to sixteen of light wines, daily; or he will make up the equivalent of this with beer or with spirits: in fact, he will take about three ounces of absolute alcohol, or the equivalent of about a gallon of the puddle-beer that labourers drink. And the young lady will not take less than three-fourths of this quantity, by the time she has finished her last champagne-cup at the ball or rout. If any one thinks this estimate excessive, we assure him that, were it discreet, we could produce accurate notes of the performances of sundry terpsichorean and otherwise athletic young ladies, of irreproachable character, to which the foregoing facts are a trifle.

It is, in fact, a considerable puzzle to understand, at first, how our respectable classes manage to consume so much more alcohol, without reproach, than the unfortunate Wiltshire clodhopper, for example, can do. No doubt one reason is that their drinks are not muddled with *Cocculus indicus*, &c., as his is. But no doubt the truth is that the intoxicative, that is the *visibly* poisonous, effects of alcohol are mainly kept at bay by powerful exertion either of the muscular or of the nervous system: and the wealthy classes to a large extent do task either one or both of these systems far more heavily than labourers, except those employed in some specially fatiguing callings. Nevertheless there is grave danger of excess, were it merely from the multiplication of alcoholic drinks which are taken by the richer classes: and it will be our aim, in the next paper, to show that adherence to one drink, and generally one *wine*, is almost a necessity for the purposes of health.

(To be continued.)

Reviews.

The Present State of Therapeutics. With some Suggestions for placing it on a more Scientific Basis. By JAMES ROGERS, M.D., formerly Physician to the British Legation and to the Abouchoff Hospital at St. Petersburg. London: Churchill. Edinburgh: MacLachlan. 1870.

It is long since we read any treatise on practical medicine which afforded us so much pleasure and instruction as we have gained from the remarkable book before us. At a time like the present, which every thoughtful physician must feel to be one of transition, and to a certain extent of hesitation and pause, before large impending changes in our systems of therapeutics, Dr. Rogers steps forward with an argument which was not merely wanted, but indispensable, before sound progress could be made. Its main drift is the demonstration that up to the present time we have really no principles of therapeutics at all, although we doubtless possess much valuable empiric knowledge. This opinion is doubtless no novelty, but the way in which Dr. Rogers proves his case is thoroughly original. He ventures to look the facts of homœopathy fairly in the face; and with a candour which is as creditable to him as the ordinary diatribes of orthodox practitioners against homœopaths are disgraceful to them, he examines and analyses the reported results of homœopathic treatment. The issue of this inquiry is very remarkable, but it is not at all surprising to us, indeed it is what we have long suspected, though it was difficult to obtain the materials for proof. Shortly stated it is this: that the results of homœopathic treatment, as tested by mortality in acute diseases, are almost exactly the same as, certainly they are no better than, that of the purely Expectant method so long carried out in Germany; but that, on the other hand, they are very greatly superior to the results obtained under the systems of heroic treatment which were everywhere in vogue till quite recently: and also, they are decidedly inferior to the results obtained by the modern "restorative treatment," which is Expectancy (or nearly that), as regards abstention from *drugs*, plus a liberal and continuous supply of easily digested food, and if necessary wine. The author has enjoyed unusual opportunities for collecting the

materials for this judgment. For very many years he resided at St. Petersburg, where he was engaged in extensive hospital and private practice, and from an early period in his career he became acquainted with the practice of some of the most famous homœopathic physicians, and also with that of the Expectant school, in various parts of Europe. He has used the facts observed in his very uncommon experience in a singularly calm and judicial temper; and we can only say that a medical man who should find himself unable to derive instruction from Dr. Rogers' treatise must be incapable of scientific reasoning.

Not less remarkable than the author's candour and skill in dealing with the vital statistics of the different systems of treatment, is the searching character of his analysis of the fundamental principles of homœopathy—the doctrine of similars, and the dynamization of remedies by dilution and succussion. With temperate but pitiless logic he demonstrates the superficial and misleading character of the supposed resemblances between diseases and the physiological effects of the drugs which, according to homœopathy, can cure them. He examines afresh the standard instances on which the doctrine of cure by similars has mainly relied: viz. the asserted power of cinchona to produce the essential phenomena of intermittent fever, the asserted similarity between the symptoms of mercurial poisoning and those of syphilis, and the asserted power of sulphur to produce symptoms of itch. In regard to the first and last of these medicines he brings into deserved prominence the very accurate and valuable experiments of Jörg, which up to the present time were really the only "provings" that merited serious consideration. He exposes the completely insufficient character of Hahnemann's original observations on the subject. He adds the detailed account of fresh experiments which were made by himself and a carefully selected corps of assistants, the result of which is the establishment of an absolute negative to the asserted power of cinchona or quinine to produce any characteristic symptom of intermittent fever, or of sulphur to cause any affection even remotely resembling itch; and he justly remarks that since the favourite examples of the homœopaths for their doctrine completely break down on investigation, it would be useless to pursue the experimental research further. But our author does much more than this, for he shows that this doctrine of similars, which ought to have been a principle of universal application, according to Hahnemann, was never clearly conceived or expressed by him; that he repeatedly contradicted himself in his explanations of its applicability to the phenomena of disease; that he was compelled to admit its complete failure in the treatment of chronic maladies, and the necessity of relying here on that very *experience*, the *uses in morbis* at which he had

railed so bitterly in his earlier writings; and further, that great numbers of the abler homœopathists, since his day, have admitted freely that it is impossible to get reliable results, in the treatment of disease, by adhering to the principle of similars in the selection of remedies. He exposes also, with great fulness, the absurdity of the principle of mere enumeration of the symptoms produced by diseases and by drugs, respectively, showing that not only is it unreasonable to expect any accurate guidance from such data, but that as a practical result of the system the best homœopathic writers declare that their *Materia Medica* is a mere chaos.

Dr. Rogers is equally successful in exposing the utter unsoundness of the doctrine of the increased potency of medicines in consequence of their dilution. As regards the more extravagant statements that had been made, it was needless to add anything by way of refutation to the striking tabular calculations made by Sir James Simpson (and reproduced by our author), which first showed in plain figures the physical facts involved in the idea of the homœopathic dilutions. We shall only reproduce one of these calculations—that of the proportion of any remedy which can be contained in globules of the 30th dilution, which was the potency ordinarily employed by Hahnemann in the latter part of his career:—“The proportion of any drug in the 30th dilution, or the decillionth globules of the homœopathists, is to the sugar contained in the globules, as one grain is to 61 quintillions of spheres of sugar, each of these 61,000,000,000,000,000,000,000,000,000,000 being of the dimensions of the earth.” The use of globules of this dilution, and of tinctures of no greater strength, is still continued by many homœopathists, and there are even those who insist on the value of much higher dilutions! But it would be a waste of time to argue about the value of such ridiculous remedies; the more so as a large number of homœopathists have publicly declared their disbelief in the efficacy of any but quite the lower dilutions (1st to 5th); and, indeed, it is no secret that some of the ablest homœopathic practitioners in this country habitually employ doses of drugs which are very little inferior in strength to those sanctioned by the regular profession. Dr. Rogers is quite as cogent in his arguments against such doses as the $\frac{1}{16}$ of a grain of ipecacuanha, for instance, as against the highest dilutions; and he shows that if modern homœopathists are justified in assuming, that cures supposed to have been made by the higher dilutions were really mere efforts of nature, there is no reasonable ground for rejecting a similar explanation of the results of treatment with the lower dilutions. He shows, moreover, that Hahnemann argued with the strangest inconsistency on the whole question of the dilution of drugs, sometimes defending it

(as in the case of arsenic) on the ground of its *lessening* the dangerous power of the agent; while in other cases he supposed that it indefinitely *increased* the potency; and he remarks on the peculiar, not to say highly suspicious, circumstance, that Hahnemann quite suddenly adopted¹ the principle of using very small doses, at a time when the opposition of the German druggists (excited by his illegal practice of dispensing his own medicines) was making him anxious to discover a compendious method of preparing remedies which would render him independent of the tradesmen. Immediately before this time he had been employing doses which most orthodox practitioners would consider very large.

In short, by an exhaustive consideration of homœopathy, both in its theoretical and its practical aspects, our author leads us irresistibly to the conclusion that as a system it is confused, self-contradicting, and devoid of any guiding principles which will for a moment bear the light of modern scientific criticism; that the remedies it recommends must, by all scientific analogy, be pronounced incapable of affecting the human body; and finally, that the results of homœopathic practice are neither better nor worse than that of purely expectant treatment in which no remedies are used; but that nevertheless it was a distinct improvement, in the interests of human life, upon most of the systems upon which drugs were administered down to a comparatively recent period. Here, however, we part company from Dr. Rogers. We are willing to admit, with him, that this view of homœopathy greatly and justly strengthens the position of those who plead for the study of the natural history of disease; or rather, we should say, it would have been a most important reinforcement of their argument some twenty-five years ago, when scarcely any one in this country dared to allow an acute disease to run its course without the interference of powerfully perturbing medicines. But we think it may now be fairly said that we know, substantially, all that can be known about the natural unchecked course of those acute diseases which, in ordinary circumstances, tend to recovery, and usually prove fatal only through complications. And both as to the source of this present knowledge, and as to the further use to be made of it, we have some considerable differences with Dr. Rogers. It may be true that homœopathy was the immediate cause of some of the more formal experiments in the direction of pure expectancy which were made in Germany by Dietl, and others. But one has to go much further back than Dietl, and to a much less narrow field of thought than that ploughed by

¹ This curious fact has also been sharply commented upon by the author of a very able series of papers on Hahnemann and Homœopathy published in the *New York Medical Gazette* for 1869.

the thin-minded Hahnemann, or even by his more liberal followers, Caspar, Hempel, Röth, Meyer, Dudgeon, &c., in order to trace the true origins of the modern rebellion against the doctrines of the phlebotomists, the salivators, the wholesale advocates of depletary purgation, and all that genus. The note of reform was sounded by John Brown in the "Elementa Medicinæ," published in 1780, but sketched out several years previously. This work immediately occasioned one of those great commotions of medical thought which invariably precede large practical reforms in medicine; but it came before its time, and consequently could not sustain its first *prestige*. Brown demonstrated, with an extraordinary force of genius, the disastrous tendency of the current metaphysical views of vital and morbid force, which led physicians to conceive of disease as a powerful and malignant entity, to be combated by strongly depressing remedies; but unhappily for medicine he could not himself escape from the metaphysical method of speculation, for the true inductive method of inquiry was impossible in the then rudimentary state of animal physiology. In order to understand the extraordinary fluctuations of opinion which caused the doctrines of Brown to be successively supplanted by those of the Italian school of contra-stimulus, and by those of Broussais, with his universal inflammatory hypothesis of disease, one has to recall to mind the slow growth of that modern science of healthy and morbid physiology of which John Hunter sowed the seeds in the last years of the eighteenth century. Nevertheless, the Brunonian doctrine never entirely lost its hold on men's minds, and from time to time assurances of its continued vitality were given by the occurrence of partial revivals of the stimulant and supporting treatment of fevers; till, in the second quarter of the present century, we meet, in Graves of Dublin, with a physiologist who had learned that acute pyrexial disease, so far from being a morbid *plus* condition of vital power (as was hastily judged by earlier pathological anatomists, from the post-mortem appearances in febrile disease), depended on causes which were directly debilitating to vital power: and it may be safely affirmed that Graves had not been led to this view by the spectacle either of the homœopathic or of the expectant practice. There is no need to mention the later and more decided development of the restorative treatment by Todd, and by Bennett of Edinburgh, further than to remark that each of these reformers did in reality justify a large part of Brown's speculative teaching by placing it on a basis of scientific physiology: the modern doctrines of innervation being the *motif* in the one case, the modern cell-doctrines in the other. And lastly, we shall not be contradicted by any one who has studied the course of opinion in the last fifteen or sixteen years, if we assert that the doctrine

of the sthenic nature of inflammations and fevers received the *coup de grâce* from the unspeakably important discovery by Bernard and Brown-Séquard of the effects of section of the sympathetic, and we believe that from that moment, although meantime the study of the so-called "natural history" of the diseases which ordinarily run a limited course has been immensely stimulated, it has become apparent we are on the verge of therapeutic discoveries, and a body of positive therapeutic doctrine, vastly different from anything which was possible in the infancy of physiology.

We dissent, then, from Dr. Rogers' estimate of the influence which homœopathy has exerted upon the therapeutics of the regular profession, although we admire his candour and generosity. Upon another and more practical point we are also obliged to disagree with him to some extent. We are ready to concede with him, that the homœopathic principle of using one drug only, at once, is highly important, at least in the case of experimental research: but we are unable to praise so highly, or to expect such large benefits as he anticipates from, mere experimentation with drugs upon healthy persons. On the contrary, we maintain that unless this method of research be constantly and jealously checked by comparative trials of the agent upon the lower animals, and also upon patients suffering from diseases of which the pathology is tolerably well known, it will lead, as it has led in the past, to most erroneous inferences.

We shall conclude this notice of a work which, on the whole, we cannot too highly recommend to our readers, with the expression of a warning and a regret. We cannot help warning the reader to remark that Dr. Rogers, probably because his active work in the profession has ceased for some years, scarcely appreciates the advances that positive therapeutics has made within the last twenty-three years. In view of such discoveries as that of chloroform, bromide of potassium, nitrite of amyl, hydrate of chloral, and several other substances which could be mentioned, we maintain that the era of mere empiricism, or of still more dangerous and delusive speculation without scientific basis, is rapidly coming to an end. And finally, we must regret that Dr. Rogers has taken no adequate notice of a movement which promises to introduce us to a perfectly new field of research; we mean the tendency to subdivision of single large doses of medicines into minute doses which are to be repeated with great frequency. Already there are signs that this method of medication will yield important results, and that the benefits of many powerful medicines may be secured without the physiological accidents which so often render them worse than useless in practice. With these exceptions we have nothing but unqualified praise for his book, which indeed belongs to a class so

far above the average of medical works that the author has nothing to fear, but everything to gain, from impartial criticism.

Renal Diseases; a Clinical Guide to their Diagnosis and Treatment. By W. R. BASHAM, M.D., F.R.C.P.; Senior Physician to the Westminster Hospital, and Lecturer on Medicine, &c., &c. London: Churchill. 1870.

DR. BASHAM has been known for many years as a worker at the subject of renal diseases; he now comes before us with a very useful and handy text-book designed to introduce students to the clinical aspects of these maladies. The work is divided into three parts; the first deals with the acute forms of nephritis, the second with chronic diseases, and the third contains a full and very practical description of the properties of the urine, physical, chemical, and morphological, significant or otherwise of renal disease. The author's purpose, unostentatiously announced in the preface, seems to us very well fulfilled: he has produced a work which will prove useful in clinical teaching, notwithstanding the many excellent works, in this department of medicine, already in the hands of the profession.

It is a melancholy but unavoidable peculiarity in treatises on kidney diseases, that they contain an overwhelming amount of diagnostic and pathological information in proportion to their therapeutical teaching, and consequently there is not much scope for the special functions of this journal in reviewing a work like Dr. Basham's. Whatever can be said on this subject, however, is stated with clearness and conciseness in his book, and the practitioner is provided with clear directions, by the help of which he may accomplish as much as there is any certainty of effecting with safety. The treatment of kidney diseases may be said to be in a transitional stage; we are exceptionally well informed of their pathology owing to the good account to which the fortunately visible indications given during life by the urine, and the microscopic appearances of the organs after death, have been turned by the labours of modern observers; but hitherto it must be confessed that the practical improvements introduced in treatment have been chiefly in the direction of rejecting the more violent and rash procedures which were dictated by insufficient knowledge of the nature of the various kinds of renal disease. Perhaps the best service which Dr. Basham has rendered to the therapeutics of kidney disease was his early and strenuous support of the principle of ferruginous treatment in a number of the chronic varieties. In another department, not belonging to renal disorder properly so-called, he has also done good service; namely, in helping with others to reduce to its proper value the some-

what formidable bugbear of oxaluria, conjured up by Dr. Golding Bird. Great mischief was probably done by the alarm created in the minds of many nervous persons, especially medical men, by the earlier estimates of the value of this symptom, which was first reduced to its proper level by the discovery of its intimate relation to excessive uric acid development. In the treatment of this complaint, or rather symptoms, Dr. Basham has very usefully combated the views of Prout, which inculcated the use of a highly animalised diet similar to that recommended for diabetes.

Perhaps the most useful part of this little work is the section on urine, which is concise and yet sufficiently detailed for practical purposes. We rather regret, however, that the author has not introduced a few diagrams of the principal varieties of microscopic objects with which the student should familiarise himself. On the whole, this volume may be recommended as supplying, in a convenient form, an account of the important group of renal diseases which is derived from large personal experience on the part of the author, and at the same time incorporates the results of the recent researches of many other observers. It will probably become a text-book in schools, and a handy book for busy practitioners.

Grundzüge der Arzneimittellehre. Ein klinisches Lehrbuch, von CARL BINZ, A.O. Professor an der Universität, Bonn. 2^{te} neuarbeitete Auflage. Berlin, 1869.

Outlines of Materia Medica. By CARL BINZ, Professor in the University of Bonn. London: Baillière.

PROFESSOR BINZ is one of the representative men in continental therapeutics, as the readers of this journal have had several occasions to discover. It is not, of course, by a mere text-book like the volume before us that his merits are to be appreciated, as this was probably intended chiefly as a class-book for students, while the author's special abilities have been displayed in more elaborate researches on the action of special substances than could properly find place in so compendious a handbook. As a manual for students it is clear and singularly concise, contrasting in that way very favourably with most of our English text-books; and it achieves this conciseness in the best manner, by omitting large portions of the merely botanical and chemical topics with which they are overladen, and giving due prominence to the action of the various medicines upon the organism. We have always felt it to be an almost inexplicable thing, that writers on *Materia Medica* should dwell at such tedious length on what are only the dry bones of the subject, and touch so briefly and perfunctorily on the only aspect of it which can give them life and

interest for the intelligent student, who is thinking about the practical work which is really the object of his profession.

While, however, we bestow due praise on the thoroughly practical and efficient way in which this *Manual of Remedies* is adapted to the purposes of class-teaching, we cannot refrain from saying that we should be sorry to suppose it is to stand alone. The time is fully come when Professor Binz should bend his attention to the production of a treatise on therapeutics, in the extended sense of the word; a treatise which should deal not merely with the uses of drugs, but with the modifications of diet, and the appliances of subsidiary measures, such as baths, electricity, and also the use of mineral waters. The crying want of the time is a large and complete work, in which the whole of these subjects should be judged, and should be placed in proper relations to each other, so that not merely the student, but the advanced practitioner, may obtain a clear view of the whole armamentarium of treatment. It cannot be said that any such treatise at present exists, and it is from men of Professor Binz's special talents and knowledge of the subject, and who enjoy the opportunity of undivided attention to it, that we justly expect the supply of our needs.

Clinic of the Month.

Treatment of Chronic Urethral Discharges.—In cases of persistent scanty discharge, the chronic state into which gonorrhœa is apt to pass, Mr. Berkeley Hill examines the canal in the first instance with the endoscope, or with the olive-headed bougie. The endoscope, it appears, has been very unsatisfactory in use; notwithstanding that Mr. Hill employs a light handy instrument, fitted with a fish-tail gas jet instead of the cumbrous paraffin lamp commonly used; but the surface which can be illuminated is so small, and the tube excites so much soreness or discomfort, that latterly the olive-headed bougie has superseded the endoscope in his hands. This can be passed without distressing the patient, and gives very exact indications of the condition of the urethra, distinguishing the diseased from the healthy localities. The bougies used are of black gum, very flexible and slender in the stem, which is marked with a ring at every successive inch from the base of the olive. The head, usually shaped like an olive, is conical, one-third of an inch long from the point to the base. When passing along the urethra this conical head is impeded by any inequality in the mucous membrane, and causes a little smarting as it passes over an excoriation or inflamed part; but when the obstruction is passed by the head, the slender stem allows the instrument to travel along without inconvenience, till the next thickening is reached. In withdrawing the bougie, the base of the olive strikes the impediment first, of which the position may be ascertained by noting how much of the graduated stem is within the urethra. So accurate is the olive bougie in revealing the inequalities of the interior of the canal, that a No. 6 will often stop at an obstruction that a No. 9 or 10 ordinary bougie will slip past. Thus the position and length of patches of chronic inflammation, when the mucous membrane has lost its pliancy to only a small extent, but which ultimately become indurated masses that seriously contract the calibre of the canal, are detected by the olive bougie at a stage when the ordinary bougie gives no evidence of their existence. In the urethras examined in this way the following conditions were found: stricture 62, tender points or excoriations 30, false passage 1. Some of these obstructions were also examined by the endoscope, and were then seen to be deep

red patches on the mucous membrane, or in a few instances, actual excoriations of the surface were observed. Besides the ordinary remedies of cubebs in frequent doses, &c., many of these cases were treated by injecting a few drops of caustic solution (one scruple to an ounce) of nitrate of silver directly on to the diseased points by a syringe contrived for the purpose. A few applications thus made have cured discharges that have lasted several months and resisted multifarious treatment. If the canal is contracted as well, the treatment is continued by passing bougies until the calibre of the canal is restored. (See *Lancet*, Feb. 26.)

Quinine in Relapsing Fever.—In three cases of relapsing fever admitted into St. Bartholomew's Hospital large doses of quinine were administered immediately before the anticipated relapse. Two cases received each ten grains on the afternoon of the thirteenth and morning of the fourteenth day of the fever, and five grains for four succeeding mornings. The third case had one ten-grain dose on the thirteenth day, followed by four five-grain doses. The results were most satisfactory, as in none of the patients thus treated did the relapse occur. (See *British Medical Journal*, Feb. 26, 1870.)

New Syringe for the Treatment of Gonorrhœa by Injections.—Mr. Durham recommends the employment of a bottle syringe with a nozzle of peculiar construction, in which the stream of injection, instead of being directed forwards as usual, is made to issue in a direction from behind forwards. (See *Guy's Hospital Reports*, 1870.)

Treatment of certain Forms of Uterine Cancer.—Dr. Routh records several cases of fibro-carcinoma, in which the growth was partially removed by the *écraseur*, and subsequently treated by bromine, in which considerable, if not permanent recovery followed. In one case, in which the anterior os was enlarged to the size of a fig, and presented some resemblance, when examined with the speculum, to fungus hæmatodes, the *écraseur* was first applied. The hæmorrhage after its use was very great, and solution of persulphate of iron had to be freely used, which led at first to considerable contraction of the canal. When the bromine was about to be applied the catamenia came on. It was subsequently used, however, when this ceased. The pain produced by it for several hours was so intense that it had to be removed. It was applied twice, and the parts assumed a healthy state when the sloughs came away. In a second case, where there was much aching of the back and copious leucorrhœa, with a suspicious growth of hard consistence continuous with the lower lip, the tumour was also removed

with the écraseur, and shortly after the bromine was applied several times. The ulcer produced would not heal, and occasionally exuded offensive discharges, bleeding freely on touch, but having a hard base. After about six applications of the bromide in the course of two months, all followed by deep sloughs, a solution of bromine was injected into the hardened base. It gave intense pain, but when the slough came away the excavated ulcer healed readily, and the patient made a perfect recovery. She has since had a healthy child. The general remedies used were first arsenic, then iron, and small doses of mercury, as there were some points in the history which rendered it probable that the patient had suffered from syphilis. (See *British Medical Journal*, March 5, 1870.)

Chloroform in the Treatment of Biliary Calculi.—Dr. Barelay, of Leicester, remarks that he has met with very great success from the internal administration of chloroform in cases of biliary calculi, and he gives the following case in point. The patient was a clergyman, aged fifty-eight. He had suffered for twenty-three years from gall-stones; the peculiar pain and jaundice, with subsequent discharge of the calculi by stool, coming on so suddenly and without warning, as seriously and frequently to interfere with his duties. Knowing that ethers are solvents of cholesterine, he ventured, on the occurrence of the third attack in one year, to prescribe chloroform in doses of two or three drops, three or four times a day, on the chance of its reaching the calculi through the blood. To the surprise of the patient, and Dr. Barelay's gratification, the pain, tenderness, distension, and jaundice disappeared together, and in the eight years that have since elapsed he has never had another attack. He keeps a bottle of chloric ether by him for occasional use. Dr. Barelay adds that he has found it to give invariable and permanent relief in many instances since. (*Ibid.* Jan. 15, 1870.)

The Sulpho-Carbolates in Zymotic Diseases.—At a recent meeting of the Obstetrical Society, Dr. Sansom read a paper on these salts, and referred to their applicability to the treatment of certain diseases of children. The compounds of the acid with sodium, potassium, ammonium, &c., were described, the active agent in each, however, being the carbolic acid. He describes them as being exceedingly soluble, by no means unpleasant to the taste, and as never producing toxic effects. Amongst many cases in which he had tried them, he had found them most useful in zymotic diseases, especially scarlatina, measles, and diphtheritic sore-throat. In these he had chiefly employed the sulpho-carbolate of sodium, in doses of from five to ten grains every four hours. In rachitis, malnutrition, and diarrhoea, he

recommended the sulpho-carbolate of calcium. (See *British Medical Journal*, Jan. 15, 1870.)

Belladonna in the Treatment of Typhoid Fever.—Dr. Kelly speaks in very high terms of this mode of treatment, declaring that “not more effectually is the tetanic action of strychnine on the system neutralized by tobacco and woorara, or paludal fever combated by quinine, or removed by chalybeates, than is the poison of typhoid fever counteracted by belladonna. It completely changes the whole character and outward manifestation of the disease. Delirium, coma, and subsultus quickly vanish, and are succeeded by calmness and clearness of the intellect, by natural sleep, and complete control of all the voluntary muscles. Diarrhœa is checked, and healthy consistent evacuations are established. The appetite, if excessive or deficient, is restored to something like a normal standard. The pulse, from being frequent, fluttering, and compressible, is rendered slow, strong, and equable. The morbid temperature of the body—the *calor mordax* of the Roman, the *causus* of the Greek physicians—falls to a natural level. The vital changes induced in the blood, glandular and other organs, as shown by passive hæmorrhages, tenderness of the abdomen, hypostatic congestions, and ulcerations, are all arrested *in limine*; and the deranged functions of the economy return to their original equilibrium, and are performed with the same regularity as in health. The patient, after an inconceivably short space of time, usually from twenty-four to forty-eight hours after the first administration of the remedy, wakes up, so to speak, and pronounces himself as well as ever; and, indeed, to look at him he really appears so. If, however, the physician be not thoroughly on his guard, and do not keep the patient quiet in bed, pending the ordinary course and duration of the disease, serious consequences will almost inevitably follow.” In regard to the time and mode of administering belladonna, Dr. Kelly states that, if the patient is seen in the incipient, he usually waits till all or most of the prominent symptoms are well developed before he ventures to prescribe the drug. When the diagnosis is perfectly established, he does not hesitate to give to an adult and vigorous patient from twenty to twenty-five drops of the officinal tincture of the British Pharmacopœia every four hours in a little peppermint water, sweetened with syrup of orange-peel. This may be continued without danger for a fortnight, and he has never known any more serious symptoms arise than moderate dilatation of the pupils (which he regards as an admirable criterion of the safety of its therapeutic action) and slight dryness of the fauces. Dr. Kelly has not been able to ascertain whether it prevents a second attack of the disease.

During convalescence he gradually diminishes the doses, and extends the time between the administration. He absolutely interdicts the employment of stimulants in any form. Finally he recommends the following dietary: a quart of soup made from cowheel and a pound of beef, a pint of milk boiled with arrowroot, an ounce of cocoa prepared in a pint of milk. (See *Medical Times and Gazette*, Feb. 5, 1870.)

Relief of Angina Pectoris by Nitrite of Amyl.—Dr. Anstie communicated to the last meeting of the Clinical Society the case of a middle-aged and highly nervous man, who had long suffered from spasmodic asthma, but in whom, during the last four or five years, severe and frequently recurring attacks of angina pectoris supervened. The violence of the affection was to some extent diminished by the employment of sulphuric ether and considerable doses of alcohol, but the attacks still recurred after fatigue or excitement. In December last it was determined to try the nitrite of amyl, and on the recurrence of the next anginal spasm the sufferer took one long and powerful inspiration, through one nostril, from a half-ounce bottle of the drug. After a pause of a few seconds the characteristic flushing of the face and sense of fulness in the head were produced, and the patient instantly passed from agony into a state of perfectly calm repose. The experiment has been several times repeated, and always with success. The action is probably due to the circumstance that amyl is a relaxer of spasm in all involuntary muscular fibres, and it is probable that it will prove particularly useful in colicky affections. Its use requires care in the aged and those who may be likely to suffer from commencing degeneration of the minute vessels of the brain, for fear of apoplexy. (See *Lancet*, March 5, 1870.)

Treatment of Acute Rheumatism.—From a recent essay by Oppolzer, we gather that the therapeutics of this disease are in as unsatisfactory a state in Germany as in this country. The Professor remarks that, as in all acute diseases, the febrile symptoms are the most important in articular rheumatism, for on their violence the prognosis depends. In order to lower the febrile symptoms the remedies in common use are rest, vegetable diet, cold baths, and lotions, and cold applications to the head. The most important agent is venesection, especially when there is any tendency to cranial or thoracic mischief. Quinine in large doses has in some instances proved very serviceable in moderating the fever and diminishing the local affections, though both are apt to recur when the quinine is suspended. Digitalis constitutes a depressing agent, acting both on the pulse and temperature; it, however, exerts less influence on the heart in febrile states of the system than in health, and

its action is, at the same time, less persistent, the frequency of the pulsations soon recurring when the use of the remedy is intermitted. The *tinctura veratri viridis* acts more quickly and with greater certainty in lowering the temperature and the pulse, but it has unpleasant secondary effects, resembling those of tartar emetic, producing vomiting, purging, and collapse. It is employed, however, by the Americans in combination with tincture of ginger and tincture of opium. The use of nitrate of potash in large doses (half an ounce), as recommended by the French, Professor Oppolzer thinks much too dangerous. He confines himself to three remedies to combat the fever, namely, diet, venesection, and lime-juice, of which last he allows six ounces a day, with sugar *ad libitum*. When the pain, swelling, and redness are considerable, he applies leeches and cold lotions. When several joints are affected, he wraps round the whole body a cloth dipped in cold water, and well wrung out, and surrounded by dry wool. To relieve the pain he considers opium and morphia inestimable. Subcutaneous injection may be adopted at the joint inflamed, and a quarter of a grain of morphia or a grain of opium may be thrown in. When the pain is very severe, this may be done every two hours. Colchicum has long been celebrated as a remedy against rheumatism. Oppolzer administers it in the form of the alkaloid colchicum in minute doses, and it may be combined with aconite, which has also long been celebrated for its power of diminishing pain and lowering the frequency of the pulse. When the pain is intense, great relief is obtained by embrocation of the chloride of clay. When swelling remains in any joint after the subsidence of fever, it may be dispersed by the local application of tincture of iodine. (See *Der praktische Arzt*, No. xii. 1869.)

Extracts from British and Foreign Journals.

Treatment of Variola.—In an interesting paper by Dr. Pepper, of Philadelphia, containing an account of a severe epidemic of variola that occurred in the year 1865, and of which upwards of thirty-three cases were under his observation, with five deaths, we extract the following remarks. From careful examination of the history of the cases, the conclusion was drawn that vaccination appears to furnish almost complete protection against the occurrence of either varioloid or variola, during the first six years of life; and the importance of this result is enormously increased by the additional fact that all the fatal cases occurred under four years of age. In subjects not vaccinated the greatest susceptibility seems to be during the first two years of life, at which time the form of the disease is very apt to be confluent. When vaccination fails from any cause, the operation should be repeated at short intervals, varying the virus, and perhaps the mode of insertion, until success is obtained, or all danger of exposure to contagion ceases. The attempt should be made again after a few years' interval. There appears to be very little risk when vaccination has preceded exposure to contagion by so short a period as two years. Yet even then it should be practised, where there is much danger of exposure, to ensure immunity, and the necessity for revaccination becomes more and more urgent, with every additional year's interval. When the protective power of vaccination has become exhausted, the subject may contract any form of variolous disease, though the chances are very much in favour of the occurrence of an attack of varioloid or a mild form of variola, no matter how long a distance of time has intervened after vaccination has been performed. It may be safely laid down as a rule of practice that whenever an individual, especially a child who has never been vaccinated, or only at a distance of two or more years, has been exposed to the contagion of variola, vaccination should be immediately performed, unless it is positively certain that the stage of incubation has so far advanced that the vaccine disease will not have time to be developed before the appearance of the variolous eruption; unless, in other words, the initial symptoms of the variolous disease have appeared. We

cannot here notice the account of the symptoms, complications, sequelæ, or results, but pass on to the treatment. This was very uniform, so far as concerns the remedies employed, and consisted in the administration of a febrifuge diuretic mixture, sulphate of cinchonia, and whisky, in almost all the cases, with a few other drugs which were used only in exceptional cases. The febrifuge mixture contained: Potass. acetat. 40 grains; sp. æther. nitrosi, 1 fluid ounce; liq. ammon. acetat. 3 fluid ounces—ft. mist. Of this from a teaspoonful to a tablespoonful was given, according to the age of the child and the degree of fever, from four to eight times a day. In most of the cases of varioloid the use of this mixture, with the regulation of the diet, constituted the entire treatment. In a few of the cases of varioloid, however, and in nearly all those of variola, either the tinct. cinchon. comp. or the sulphate of cinchonia was used as a general muscular and cardiac tonic, with the object of counteracting what constituted a most alarming symptom in many instances, namely, the marked tendency to debility and failure of the powers of the circulation. In only two cases of varioloid was any whisky given, but all the cases of variola under five years of age took two ounces of whisky daily, and apparently with favourable results. In those who were more than five years of age the amount given had reference in every instance to the state of the patient, and varied accordingly from two to eighteen ounces daily. Opium was given freely in full doses at any stage of the disease when the nervous restlessness or pain was so marked as to prevent refreshing sleep. It was found especially useful during the stage of secondary fever. In cases occurring more recently, bromide of potassium was given in large doses during the maturative fever, and in most instances was found to act admirably in quieting agitation, and securing refreshing sleep. Nausea and vomiting were treated by the external applications of sinapisms over the stomach, and by the administration of small fragments of ice, and of small quantities of lime-water and milk. Where the bowels were constipated, repeated doses of the tincture or the aromatic syrup of rhubarb were administered, aided in their action by enemata at times containing castor-oil, so as to secure at least one full evacuation every forty-eight hours. Diarrhœa was rare, and when present readily yielded to chalk and opium. The diet was invariably highly nutritious, and consisted chiefly of milk, with or without arrow-root, beef-tea or Liebig's extract, and eggs. After the subsidence of the secondary fever, iron usually in the form of tinct. ferri sesquichloridi, combined with spirits of nitric ether, was prescribed, and its use continued in conjunction with small doses of sulphate of cinchonia and nutritious diet throughout convalescence. (*American Journal of Medical Sciences*, Oct. 1862.)

Treatment of Polypus of the Rectum.—Mr. Miller, in a paper read before the Medico-Chirurgical Society of Edinburgh, divides polypi of the rectum, which on the whole are rarely met with, into : 1. The mucous or glandular, which is soft, bright red, compressible, spheroidal, or vermiform, and composed essentially of tubular glands ; 2. The fibrous, which is globular or oval, dense and hard, and composed of connective tissue ; and 3. The various malignant forms described under the terms epithelial, schirrous, and villous tumours. The glandular form is most frequent, the fibrous the rarest. In regard to the mode of removal of these growths, Mr. Miller observes that the knife, scissors, ligature, and nitric acid have all been recommended and used, but he has no hesitation in saying, after careful investigation of recorded cases and facts, that the ligature is the safest and most proper instrument to employ. The polypus may be cut off immediately afterwards, but the ligature should always be applied as a precautionary measure. Several surgeons have cut away glandular polypi, and they have been torn off by efforts of straining at stool, without any serious hæmorrhage occurring. But from the results of careful examination of these growths after removal, it is evident that their vascularity is such as to necessitate precaution. However non-vascular in appearance, a polypus should not be removed by the single stroke of a knife or pair of scissors. No tumour could have appeared more decidedly non-vascular than one which he removed, hard, pale, and without sensibility ; and yet there was a vessel in the pedicle, which, if it had not been secured by ligature, would certainly have given rise to troublesome hæmorrhage. It may be borne in mind also that the polypus once removed, its origin will not easily be reached and exposed for the purpose of applying hæmostatics. Serious hæmorrhage has occurred after removal of these growths, and plugging of the rectum has been had recourse to on more than one occasion : hence he thinks the ligature, either alone or followed by scissors, is the proper mode of treatment. (*Edinburgh Med. and Surg. Journal*, Jan. 1870.)

Employment of Ergot in Aneurism of the Aorta.—This method of treatment is upheld by the high authority of M. Langenbeck, on the ground that ergot induces contraction of the smooth muscular fibres, and thus acts as a powerful agent in producing hæmostasis. A case is recorded in which, in a man aged 45, with subclavicular aneurism of the right side, a tumour had formed the size of a small apple. The patient was deprived of sleep in consequence of the violence of the pain ; the hand was atrophied. On the 6th January, 1869, M. Langenbeck injected about half a grain of an aqueous extract of

ergot under the skin covering the tumour, together with 40 grains of Boujeau's extract or ergotine, 100 grains of alcohol, and 100 grains of glycerine. The next day considerable diminution of the swelling was observed. From the 6th January to the 17th February about 35 grains of the ergotine had been injected, the injections being made every third day, and the quantity injected varying from one-half of a grain to one grain and a half. Progressive improvement followed, and he was soon able to write a long letter. The aneurism still presents pulsations, but much more feeble than before, and its size had considerably diminished. He cites another case, in which an aneurism of the size of a nut on the right radial was rapidly cured by the same means. (*Bulletin Général de Théraputique*, December 30, 1869.)

Chloral in Hooping Cough.—M. Ferrand highly extols chloral as an agent which, easily administered, and producing no ill effects, is admirably adapted to relieve attacks of hooping-cough which are not of a serious nature. He tried it in the first instance on the children of a family recently arrived in Paris. After adopting various treatments for more than a month without beneficial results, he administered about five grains of chloral, dissolved in simple syrup, three times a day. The results were unexpected. The children slept well, without interruption as before from violent attacks of coughing. An attack occurred for a few days in the morning, but soon ceased, and in about a fortnight they were all nearly or quite well. M. Ferrand considers that the action of chloral and of chloroform are essentially different, and agrees with M. Gubler in thinking, that whilst the latter acts on the sensory nerve-cells and produces death, by inducing anæsthesia and gradual loss of muscular power, chloral seems to be a poison acting on the heart, which it paralyses before acting on the other elements of the motor system. It ought to be mentioned, that in the cases above referred to, M. Ferrand had previously employed chloroform without effect. (*Bulletin Général de Théraputique*, Jan. 30.)

Effects of Tobacco.—Dr. Parker, of New York, says in a recent letter, that it is now proved beyond all doubt that tobacco is a poison. Cigar makers, snuff manufacturers, &c., have fallen under his care in hospitals and in private practice, and he has observed that such persons never recover soon and in a healthy manner from any case of injury or fever. They are, he considers, more apt to die in epidemics, and more prone to apoplexy and paralysis; and this is true also of all that chew or smoke much. There is some evidence that this poison enfeebles the mind. The Emperor Napoleon had his attention called to this subject

in 1862 by a scientific statistician. It was observed, from 1812 to 1832, that the tobacco tax averaged twenty-eight millions of francs annually, and there were eight thousand paralytics and insane in the hospitals of France. In 1862, the tobacco revenue had reached one hundred and eighty millions, and in the hospitals were forty-four thousand paralytics, &c. The obvious inference is, that tobacco has a strong influence in producing these classes of nervous diseases. (*Medical and Surgical Reporter*, No. 666, 1869.)

The Use of the Long Tube in Intestinal Obstruction.

—Dr. Burritt communicates three cases in which, after obstruction of the bowels had lasted for many days, and various forms of medicine and ordinary injections had been administered without result, copious evacuations were obtained by the introduction of a long tube, through which warm water, solution of belladonna, and other remedies were injected with the best results. The great point in regard to its introduction is, he thinks, to pass constantly a stream from the tube ahead of its own passage. The tube passes more easily when the patient is lying on his left side, and is afterwards turned on his back. Most of the cases he has seen were without any discoverable tumour, and the locality of the obstruction uncertain. The only resistance is at the sphincter. The discharge of air from the intestine *per se* renders the patient more comfortable. (*Ibid.*)

The Subcutaneous Injection of Corrosive Fluids.—

Professor Richet, in Paris, has lately occupied himself with experiments, in which he has endeavoured to remove tumours by what he has termed interstitial cauterisation. He introduces the caustic substance, not in the solid form, but in the fluid, by the aid of a Pravaz's injection syringe. He was incited to these experiments by the success which attended those of Bérard, who employed caustics thus subcutaneously injected for the cure of erectile vascular tumours, and he hoped to extend this method of treatment to a variety of other tumours. Bérard experienced some bad results, but he used the bichloride of mercury. M. Richet determined to use the chloride of zinc, which, whilst acting locally as a powerful caustic, has no remarkable toxic action on the system generally. Bonnet had already used it in the solid form, especially for the destruction of fatty tumours and sebaceous cysts; and as these have little vitality and show little reaction, Richet began his experiments with them. For this purpose he injected four or five drops of chloride of zinc, that had deliquesced from exposure to the air, and he obtained the following results:—When the cysts were true lipoma (pure fatty tumours), after the lapse of a few days they could be most easily squeezed out of a very small opening made in the skin at

the point of injection, and this even when they were of considerable size; when, however, the apparent sebaceous tumours (of the head) happened to be composed, as they sometimes are, of concentric layers of connective tissue, or of the remains of effusion of blood, this mode of treatment proved of no service, and it was necessary to resort to the knife. M. Richet also found this method serviceable in cases of adenitis suppurativa, or serofulous suppurating glands, which rapidly disappeared with abundant suppuration. (*Wiener Med. Wochenschrift*, No. 90.)

Treatment of Convulsions of the Perinæum, attended with Laceration of the Urethra.—Dr. Rogers, of New York, makes some remarks on this subject, *à propos* to a case that came under his observation some time ago. In this case, soon after the receipt of the injury, which was followed by inability to pass the water, a tumour rose in the perinæum, which rapidly attained large dimensions. A trochar was passed into the bladder through the rectum, but little urine escaped; incisions were made in the swollen parts, and the man gradually improved, but still suffered from a traumatic stricture, some sinuses, and a urinary fistula in the perinæum. In this condition he was seen by Dr. Rogers. It had been found impossible at any time after the injury to pass a catheter, and several efforts had been made with the nitrate of silver to close the fistula. On examination three months after the injury, a stricture just admitting No. 4 catheter was found at the end of the bulbous portion of the urethra, and on introducing a sound through the fistula, the two came into contact. The urine passed in about equal quantities by the two passages. It was thought that systematic dilatation by the use of the sound would cure the stricture, and in time the fistula, and to expedite the process the stricture was divided, and a No. 12 catheter then easily passed into the bladder. The perinæal wound was closed over it by silver wire sutures. Great reduction in the size of the fistula occurred, but it still remained. The track of the fistula was now traversed by a thick iron wire carried across the perinæum, which set up much inflammation, but did not close the fistula. A hypodermic syringe charged with liquid chloride of antimony was made to penetrate the fistula near its upper part, and the fluid injected; severe urethritis followed, with considerable inflammation of the fistulous track. When this had subsided a No. 8 catheter was introduced, and the urethra freely laid open to the extent of an inch and a half at, in front of, and behind the original stricture, but the urine still escaped freely by the perinæal opening. On the third week of the operation strong nitric acid was applied to the back of the perinæal wound, without results; finally the actual cautery was applied through the ear speculum to the deeper

parts of the fistulous track. A repetition of this effected a cure, the patient being able to pass a No. 14 or 15 sound without difficulty five months afterwards. We have not space to follow Mr. Rogers' comments in detail, but he shows that whilst after perineal injuries it is expedient, in the first instance, to attempt to pass a sound or catheter, this should be done with the greatest delicacy; and as soon as any symptoms of extravasation of urine appear, a free incision should be made in the middle line. But if coincidentally there be paralysis of the bladder with distension, or distension of the viscus from urethral obstruction, the open canal behind the point of laceration must be found, and the catheter passed into the bladder, and if this cannot be done at the perineal incision the urethra must be sought for at a point further back, by extending the incision deeply down to a little in front of the anus, to effect which he quotes the description given by Mr. Simon in his lectures. (*New York Medical Journal*, Jan. 1870.)

Subcutaneous Injection of Morphia as an Aid in producing Chloroform Narcosis.—Dr. C. Uterhart, of Rostock, states that he first tried this method in the case of a drunkard suffering from a dislocation of the shoulder. In this man he adopted the suggestion of Thierfelder, who suggested the subcutaneous injection of morphia in luxations as a means of producing muscular relaxation instead of chloroform. Nevertheless, although half a grain of morphia was injected, no benefit was obtained. Chloroform was therefore ultimately resorted to; and he was much surprised to find that it produced its effect without occasioning any excitation, and much more quickly than might have been expected from the known habits of the individual, and the reduction of the dislocation was speedily effected. He now made an experiment on a dog, in which animal a violent stage of excitement usually occurs when chloroform is employed, terminating in death. Between three and four grains of morphia were subcutaneously injected. The narcosis succeeded satisfactorily, and after the lapse of half an hour the animal was intentionally killed with chloroform. No stage of excitement supervened; it remained perfectly quiet, and required a large quantity to produce death, which occurred without convulsions. In some experiments made upon himself, similar results were obtained, the previous subcutaneous injection of morphia appearing to abolish the stage of excitement. He has found it most advantageous in drunkards to inject about half a grain of morphia, which should be allowed to produce its full effect before the administration of chloroform is commenced, ten minutes being usually sufficient between the two. (*Deutsche Klinik*, 1869.)

Milk in Diabetes.—Dr. Balfour, in a clinical lecture delivered at the Royal Infirmary, Edinburgh, advocates the employment of milk as a curative article of diet, which has been so strongly recommended by Dr. Karell of St. Petersburg. It appears that this mode of treatment has been objected to by Dr. Pavy on the grounds of milk containing a peculiar form of sugar, and its unfavourable effect in a patient under his care. This patient, however, was treated not with milk alone, but with milk combined with a full meat diet, and a large amount of suet, obviously, therefore, under different conditions from one who was altogether restricted to milk. In the case recorded by Dr. Balfour great improvement, though not a perfect cure, resulted from its employment; and as he observes, whilst it is a mode of treatment simple, easily procurable, and inexpensive, can easily be carried out at home, and does not exclude the employment of opium, iron, quinine, or any other remedies that may be considered appropriate. The quantity of milk allowed in the first instance may be from four to six pints, and may be conjoined after a few days with a little plain bread and salt, or a salt herring. (*Edinburgh Medical Journal*, Feb. 1870.)

Influence of Lactation on the Health of the Mother.—At a recent meeting of the Academy of Medicine (Feb. 8), M. Decaisne presented a note on this subject, containing the following conclusions:—1. Pregnancy, delivery, lactation, ought to be considered as a chain of natural events that cannot be broken without endangering the health of the mother. 2. A large number of facts have been accumulated, showing that the mother who does not nurse her infant is rendered more liable to peritonitis, inflammation of the uterus, to abscesses of various kinds, to certain chronic diseases, and to cancer of the breast and uterus. 3. It is a matter of fact that various states of the economy which are so commonly regarded as constituting obstacles to nursing the child, as chlorosis, anæmia, certain affections of the stomach, and that state which is vaguely designated debility of constitution, far from being a motive leading the medical attendant to dissuade the mother from nursing her child, ought, on the contrary, to cause him to recommend lactation as a means of re-establishing the functions of her organism. 4. It is unquestionable that some women really are unable to perform the duties of nursing, but excepting in those cases where the health of the mother would be compromised, nursing should always be recommended. 5. It is scarcely worth while to repeat that it is by no means indispensable that a woman should be very robust, and in absolutely perfect health, in order to enable her to suckle her child, or that we be still more *exigéant* in the case of a hired wet nurse. Experience, M. Decaisne observes, has taught

him that, contrary to some ordinarily received opinions, at least three-fourths of the females of the better classes, who are so readily exonerated by the doctor from the trouble of nursing, are perfectly capable of nursing their children, not only without harm, but with positive benefit to their own health. (*La Revue Médicale*, Feb. 12, 1870.)

Digitalis in Orchitis.—Dr. Besnier states that, having frequently seen M. Dibout employ digitalis with success as an outward application in cases of hydrocele, he has adopted the same plan in cases of orchitis, however produced, and the results obtained have been such as to warrant further trial. The mode of procedure he adopted was the following :—The invalid is kept at perfect rest, with the scrotum conveniently raised, and constantly surrounded with compresses soaked in a concentrated infusion of the leaves of the digitalis. The infusion may be either warm or cold, as most agreeable to the feelings of the patient, but under any circumstances they should be kept constantly moist; a covering of oiled silk being placed over all. (*Bulletin Générale de Théraputique*, Feb. 1870.)

Tubercular Ulceration of the Mouth and Tongue.—M. Trélat, of Paris, describes a peculiar form of ulceration of the tongue to which he observes little attention has hitherto been paid. The first case which particularly arrested his attention occurred in a young man, who stoutly and truthfully denied the previous existence of any syphilitic infection. His general health appeared in all respects good. The affected part presented a hard nucleus on the left side of the tongue, ulcerated at its most prominent part, the ulcer presenting bright red edges, rosy-grey base, with papillary elevations, and a slightly irregular contour. Notwithstanding the man's assertion, it was treated as a case of secondary syphilitic ulceration, but without success, and he left the hospital. Six months after he returned with the disease in the same state, except that it was a little larger, and painful during mastication. Various empirical remedies were now employed, including borax, tannin, and tincture of iodine, but all with equally unsatisfactory results, and he once more left the hospital. Before leaving, however, auscultation had shown the presence of tubercular disease of the left lung, the ulcer on the tongue having existed ten months. Soon the patient again applied for admission, with a second ulcer on the opposite side. There were also some erosions on the surface of the tongue, surrounded by a lively red border; mastication was difficult, salivation abundant and constant. He was insufficiently nourished, and consequently depressed. Under these circumstances a consultation was held with M. P. Broca, and it was agreed to apply the actual cautery. This was done under chloroform,

severe pain being experienced on the return of consciousness. Opium was administered, both internally and by means of gargles, by means of which it was assuaged in a few hours. In a few days the eschars separated, but, the surface still appearing yellowish, were touched with carbolic acid. Rapid improvement followed and continued. But the patient afterwards fell a victim to tubercle of the lungs. The author particularly notices that the ulceration precedes in many of these cases any sign of pulmonic disease by many months, though the opposite is most frequent. He believes them to be due to the ulceration of the tuberculous deposits in the mucous membrane. (*Archives Générales de Médecine*, Jan. 1870.)

Arseniate and Oxalate of Iron in Uterine Disease.—

A paper appears by Dr. Field in the first number of a new American periodical, copies of which have been just transmitted to us—*The Journal of the Gynecological Society*—upon the necessity of associating constitutional medication with topical applications in the treatment of uterine disease. In the course of his observations he remarks that in some of his uterine cases he has found arsenic, and especially arseniate of iron, very effective in removing constipation, and has sometimes obtained benefit from this agent when he has failed to make a successful impression with any of the more commonly used remedies. He also states that in regard to the use of iron generally, he has been much pleased with the action of the oxalate of iron; for this being a light and tasteless powder, with nothing repulsive in its appearance, can be exhibited in that form to those occasional patients who are unable to swallow a pill. He has been led to value this preparation, however, as having proved in his experience less liable to cause irritation or derangement of the stomach, or constipation of the bowels, than any other form of iron; and in several instances it has agreed with and benefited patients, who from past experience believed themselves unable to take iron in any form.

Therapeutical Properties of Turpentine.—

M. Benoit observes that, applied as an external agent, it acts admirably as a rapid rubefacient, and has hence been employed for sciatica, lumbago, bronchitis, and chronic peritonitis, in recession of the exanthemata, and metastatic forms of rheumatism, and he thinks its use in these cases is too much neglected. Its value as an internal remedy is more difficult to establish. The disagreeable nature of its odour and flavour constitute great objections to its employment; nevertheless, it is by no means a remedy of recent introduction into practice. Owing to the recommendations of Récamier, it has been extensively employed in sciatica, and when given in small doses causes heat, accompanied by sweating

of the lower limbs, especially in that affected, and along the course of the nerve affected, features of its action that did not escape the notice of Cullen and Home; and it is remarkable that the more violent the pain the more probable is it that it will prove of service. In larger doses it has enjoyed some celebrity as a remedy against tetanus, muscular contraction, worms, hepatic colic, intermittent fevers, and diabetes, whilst its hæmostatic properties seem to be well established. Trousseau convinced himself that it was a valuable agent in curing catarrh of the genito-urinary tract, especially in the chronic stage. The observations of Trousseau have led to its employment in leucorrhœa, blennorrhœa, gonorrhœa, and catarrh of the respiratory tubes, with great advantage to the patient. On the same principle it has been used in phthisis, and especially in chronic bronchitis. The best mode of administration is by the capsules. (*La Presse Médicale Belge*, Feb. 20, 1870.)

Puncture of the Abdomen in Pneumatosis Gastro-intestinalis.—Dr. Stein, of Bayreuth, observes that the puncture of the abdomen by means of a fine trochar is an operation of so simple, and at the same time, as shown by experience, of so harmless a nature, that it is surprising it is not more frequently performed, either as a means of preserving life, or as a palliative means. Niemeyer is indeed opposed to it. Köhler only considers it admissible as a *dernier ressort*. Hochstetter details a case of acute tympanitis from eating unripe fruit, where, though proposed, it was not allowed to be performed on account of the supposed danger attending it, and the patient died in two hours. Oppolzer and others have occasionally tried or recommended it. M. Stein has performed the operation in two cases. One was a young woman with a large ovarian tumour compressing the large intestine, and leading to tympanitis of so severe a character that suffocation was threatened. A puncture was made with a trochar in the cæcal region with great relief to the patient, and the operation was then repeated once or twice a day for about fifty times, each time with the greatest advantage, and the express wish of the patient. After death, which resulted from the primary disease, scarcely any marks of the puncture were visible, and there were absolutely no indications of past or present inflammation of the peritoneum. The second case is too long to give a satisfactory abstract of, but in it also frequent puncture was adopted below the ensiform cartilage, which, though the marks were clearly visible after death, had certainly produced no injurious effects. (*Deutsches Archiv für Klinische Medizin*, Band vi. Heft iv. 1869.)

Hypochloride of Soda in Saturnine Discoloration of the Skin.—M. Méhu refers, in the first instance, to the mode in

which the skin becomes discoloured in those who are workers in lead, by the action of the sulphur which the epithelium, in common with all albuminous compounds, contains, amounting to about one per cent., and the remarkable blackening which occurs when such patients are exposed to the action of a bath containing sulphuretted hydrogen. The sulphur so deposited is remarkably insoluble in water, in dilute acids, and in alkaline and sulphuretted alkaline solutions. Fortunately, however, this black discoloration can be removed by the action of hypochloride of soda; and M. Méhu has found the best results to follow from the immersion of the whole body in a bath containing 400 grammes of chloride of lime (dry), 800 grammes of crystallized carbonate of soda, with 10 litres of water. The chloride of lime should be dissolved in water, the insoluble portions being removed by filtering; to the clear liquid should then be added the crystallized carbonate of soda, also dissolved in some of the water. Some carbonate of lime falls, and the clear liquid retains the hypochloride of soda in solution. This fluid may then be poured into an ordinary bath, the smell being, if considered disagreeable, covered with a few drops of an alcoholic solution of essence of lemon, or with a little eau-de-cologne. The patient should be exposed to its influence for three quarters of an hour, the skin being vigorously rubbed with the hand, or scrubbed with a brush. He gives the details of a case where a workman had been thoroughly blackened by a bath containing sulphuretted hydrogen, but who to his own astonishment left the bath with a clear skin of its natural tint. Although the patient repeated his sulphuretted hydrogen bath a day or two afterwards, no alteration of colour was produced, the hypochloride appearing to have removed all the lead present. The discoloured skin is hard and dry and rough, but after the action of the hypochloride it regains its smoothness and flexibility. In some instances a few ounces of carbonate of soda may be added in excess, to render the solution more alkaline, for the *rationale* of the action of the hypochloride appears to be that the salts of lead are converted into the condition of chloride, passing, if in the state of sulphuret, through the intermediate stage of the sulphate by the agency of the hypochloride; and the chloride of lead so produced is, as is well known, tolerably soluble in solution of the alkaline chlorides. (*Bulletin Générale de Thérapeutique*, Jan. 30, 1870.)

Therapeutic Value of Permanganate of Potash.—Dr. Williams, of Springborough, Pennsylvania, desires to call the attention of gynæcologists to the value of this remedy in cases of excessive purulent and prolonged lochial discharge. He records a case in which, about the fifth or sixth day after delivery in a primipara, the lochia, abundant from the first, became puru-

lent and highly offensive. The medical man in attendance assured the friends that the discharge would cease spontaneously, and that no treatment was required. Dr. Williams was, however, called in, and on his first visit found the discharges so indescribably offensive that they could not long be borne. An injection was immediately ordered to be thrown into the vagina, containing 10 grains of permanganate of potash, dissolved in a pint of water, and to be repeated twice a day. In two days the foetid odour was removed, and the discharges were not only natural in appearance, but far less copious. The treatment was continued two days longer, and the patient was pronounced cured. Experience derived from other cases has shown him that this salt will not only destroy fœtor, but effect a speedy diminution in the quantity, and hence he tried it in simple cases of excessive lochia, and obtained satisfactory results. It has been found of advantage in ulceration of the neck of the uterus occurring in a non-pregnant woman. (*Hay's American Journal*, Jan. 1870.)

Results of Ovariectomy.—Dr. Atter, of Philadelphia, reports the results of 200 cases of ovariectomy. The mortality has been about 30 per cent. The method adopted has been that designated as the “minor operation,” characterised by the small extent of the incision in the abdominal walls, and the reduction in size of the cyst, by the evacuation of its contents prior to extraction. In the treatment of the pedicle he uses the clamp; as an anæsthetic agent, he administers a combination of chloroform and ether in the proportion of one part of the former to two of the latter, liquid measure. This he finds to be an effective combination in producing insensibility, safe in its administration, and less liable to provoke nausea and vomiting than either agent uncombined. In the deligation of bleeding vessel she uses the hempen thread ligature. The incision is closed by iron wire interrupted sutures. In operating he stands on the right side of the patient. (*Ibid.*)

Notes and Queries.

DEPARTMENT OF NEW INVENTIONS.¹

CHOCOLATE OF THE "COMPAGNIE COLONIALE."—This article is a good representative of the class of well-prepared cacaos, simply sweetened. It is free from the admixture of any foreign ingredients except sugar, and professes to be prepared from the finest specimens of the cacao-bean. The flavour certainly is that of the finer sorts, there is no woody fibre, and the roasting and grinding of the bean has been carefully carried out. The proper aroma of the roasted bean is preserved, and the physical quality of smoothness is attained. The article strikes us as good, but somewhat dear, and rather unnecessarily tricked out and adorned with fanciful wrappings and covers. That is all right for the *bonbons*, but breakfast chocolate and luncheon tablets should not be disguised in such a fashion.

COLMAN'S BRITISH CORN FLOUR.—This is a preparation intended to take the place of the various substances known as "Corn-flour," "Maizena," &c. It is essentially a rice-starch, prepared with considerable care as to quality, and with great mechanical perfection. We have tried this extensively for some months, and caused it to be tried by several friends, in every variety of form, as puddings, blanc-mange, custard, cream, infant's food. The result of this experience is, that although the new food is not superior, perhaps not quite equal, to some other "corn-flours" for the purpose of making puddings, it is superior to them as a basis for blanc-mange and cream for invalids and infants. It is really often very important to secure a means of making a delicate and thoroughly palatable blanc-mange, containing a certain amount of farinaceous matter, and that made from the new preparation has the advantage that it is equally agreeable when taken hot and melted, or cold and stiff. In this respect Colman's corn-flour is an acquisition to the nursery and the sick-room, only we hope that its probable

¹ Under this heading the Editor proposes, in future, to give short and impartial criticisms of new drugs and articles of diet (with analyses and microscopic inspections by competent authorities), and of new mechanical appliances in practical Medicine and Surgery.

popularity will not induce nurses and mothers to err on the side of giving too much starchy matter to very young infants.

GAIFFE'S APPAREIL D'INDUCTION VOLTA-FARADIQUE.—This is a very neat and handy portable, indeed pocket, apparatus for applying the interrupted current: it is scarcely larger than a duodecimo volume. The current is generated from two cells of a chloride of silver battery; the coil is of the ordinary form of these small apparatuses; the hammer is a particularly neat one, and can very readily be managed, so as to increase or diminish the rapidity of the interruptions. We have tried the apparatus very thoroughly, and have to report as follows: it has been used forty-eight times, the length of the *séances* varying from five to fifteen minutes, and at present there appears no want of power. The secondary current is an extremely active irritant, both to skin nerves and to muscles: the fault, indeed, of the apparatus is, that this current, even at the lowest intensity of the coil, is too painful for delicate and sensitive persons, and too fatiguing to muscles which have only very feeble contractile power. The primary current is more manageable, and with the lower powers of this it is possible sometimes to get effective action of a muscle without disturbing the skin nerves materially, unless they are hyper-sensitive. The apparatus is well fitted for the treatment of hysterical and other anæsthesie; it partakes, in this respect, of the characteristics of the magneto-electric machines. We do not, however, like the form of wire-brush which is supplied; a much more effective form is that supplied with Stöhrer's induction machines. For the treatment of facial palsy, rheumatic paralyses, and of the simpler cases of lead palsy, as also for the restoration of muscles only slightly wasted from disuse after hemiplegic attacks, the apparatus will probably prove very useful. It certainly cannot compete, for general efficiency, with Stöhrer's machines, but, on the other hand, is much cheaper and more portable.

CORRESPONDENCE.

BLISTERS IN HERPETIC NEURALGIA.—We have received the following from Dr. J. K. Spender, of Bath:—"There is a remark in your paper on the 'Theory of Counter-irritation,' in the last number of the *Practitioner*, on which I am happy to offer some personal testimony. You say that when blisters are used in the treatment of neuralgia, they should be applied, not directly to the seat of pain (for then they only aggravate the suffering), but to a posterior branch of the spinal nerve-trunk, from which the painful nerve issues. This doctrine is so true, that for twelve years and more I have found only one remedy to give decided and

permanent relief in the neuralgia of herpes zoster of the trunk, and that is, a blister applied just on the side of the spine corresponding to the seat of the disease. The blister should be allowed to rise well, and be kept discharging for two or three days; it may then be gradually healed by any simple ointment. This plan has not once disappointed me, and has produced effects more lasting than the subcutaneous injection of morphia. We may sometimes profitably reason backwards from therapeutics to pathology, and nothing more commends to my judgment the neurological theory of rheumatism than the unquestionable efficacy of blisters. Dr. Broadbent has also noticed (*Lancet*, March 14, 1868) how the so-called 'muscular rheumatism' is sometimes relieved by blisters applied to the skin adjacent to the spinal column."

THE POISONOUS DOSE OF CHLORAL.—A correspondent, "Chemicus," sends us the following:—"Having just seen the paragraph on the above subject in this month's *Practitioner*, I am led to think you may be glad to have some particulars of a somewhat similar case lately under my notice, although from a layman. +

"With the approval of my medical attendant, I gave four grains of hydrate of chloral to my child, a boy of 3½ years of age, for seven nights in succession, in order to allay the constant sickness dependent on whooping-cough, from which he was suffering. In this the chloral was perfectly successful; and having been administered for seven nights in succession with no apparent bad consequences, it was omitted on the eighth night, and on the next day the patient exhibited symptoms precisely similar to those mentioned by Dr. Reynolds, only of less severity. They yielded to food and stimulants, accompanied by small doses of tincture of nux vomica, and for two days the patient appeared quite well, but on the third day the same symptoms returned with increased severity. The same treatment was adopted as before, and with the same success, and there has been no return of the unfavourable symptoms since. This case seems remarkable from the smallness of the dose employed."

GUAIACUM IN QUINSY.—The following note from Mr. Horatio Brenchley, of Denmark Hill, was accidentally omitted from our March number:—"I find a paper in the *Practitioner* for February by Dr. Atkinson, recommending guaiacum in quinsy, with gargles of tinct. iodini.

"I copy from my note-book (taken from Braithwaite twelve years ago)—Pulvis guaiaci, gr. x; potass. nitrat., gr. v. 4tis horis: tinct. iodini to the tonsils: and I can state the practice, after some years' trial, to be highly beneficial."

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¹ Any of the foreign works may be procured by application to Williams & Norgate, of Henrietta Street, Covent Garden, W.C.; or Messrs. Dulau, of Soho Square, W.C.

THE PRACTITIONER.

MAY, 1870.

Original Communications.

ON THE USE OF SARSAPARILLA IN SYPHILIS.

BY T. CLIFFORD ALLBUTT, M.A., M.D. CANTAB., F.R.S.

Physician to Leeds Infirmary, &c.

ONE of the most curious examples of a rise and fall in popularity is the present estimate of the use of sarsaparilla in syphilis, when compared with the estimation in which it was held some years ago. The specific virtues of few drugs have been so highly vaunted as this supposed virtue of sarsaparilla; scarcely any drug in the Pharmacopœia is now so much neglected. It has been a matter of reproach to us that medicines praised one day are despised the next, and the reproach is not, perhaps, without justice. In some instances drugs are discarded for good reasons; they are, and deserve only to be, the invention of a day. In other instances, as may be the case with acupuncture or with carbolic acid in surgery, success depends upon a number of conditions which it is difficult to unite, and methods of treatment fall into disuse on account of some complexity in the conditions of their use rather than on account of any worthlessness in themselves. The adoption and disuse of sarsaparilla, however, have no such excuse as this; the revelation of its virtues is to be had with little trouble and under simple conditions, and its disuse has been due only to a curious result of routine. The fact is, the antisymphilitic effects of sarsaparilla depend upon the dose

in which it is given. Because decoctions and infusions are supposed, in all well-regulated prescriptions, to be given in the quantities of two table-spoonfuls three times a day, so sarsaparilla was supposed to be no exception to this arrangement, and in doses of one ounce it was accordingly given. I myself was a victim to this routine, until my attention was drawn to its use in the practice of my late friend and colleague Mr. Samuel Smith, so long the eminent and successful senior surgeon to the Leeds Infirmary.

Mr. Smith gave the remedy in doses of one and two pints a day, and with great success. So convinced were his colleagues of the value of sarsaparilla when administered in adequate doses, that I believe I am at liberty to say that many of them still find in large doses of this drug one of their best remedies. The only excuse I have for bringing the subject forward is, that the treatment has been in use for a quarter of a century at least in the Leeds Infirmary and no one has yet published the results. I may add that, as I have formed a special class for diseases of the skin, so it may be that the antisyphilitic remedies have been more needed in my practice on that account. It is only as a follower of others, however, that I can speak on this subject at all. The remedy is used by us as a decoction, which is made in the infirmary in large quantities. Of this decoction, which differs only in unimportant details from the compound decoction of the Pharmacopœia, we administer from four to ten ounces three times a day, or prescribe some such quantity as a pint or a pint and a half to be taken at will during the twenty-four hours. This medication is expensive no doubt, but that treatment is the cheapest which most quickly cures the patient. The cases in which sarsaparilla is most useful are cases in which the system is thoroughly infected with syphilis, during the tertiary and visceral modes of its appearances.

In persons who are in a thoroughly cachectic state, who have lost flesh and strength, and who are suffering from sluggish ulcerations and indolent gummata, the sarsaparilla is really of very great value. I believe there is scarcely a practitioner among my readers who will not rejoice to hear of a remedy which will help him to cleanse and to re-establish old syphilitic patients,—patients whose constitutions have been undermined

by want of nourishment or by excesses, who have gone through many courses of mercury, whose irritable mucous membranes will not bear any more iodide of potassium, and who are so sallow, so worn, so broken down, so eaten up by disease as to seem fit only for the grave. These persons clear up on such quantities of sarsaparilla as I have named, and it is here that the drug fills so important a gap. It need not, and it will not, supersede mercury and iodide of potassium in straightforward cases, but it has its place where these means have failed, or where they are on some grounds to be avoided. How far we are right in claiming this important place for sarsaparilla can only be known after an extended use of the drug according to our method by the profession at large. No array of my cases can do more than illustrate my opinions, and one or two instances will do this as well as a score.

Take, for example, the following: — is nominally a laundress, and by practice a prostitute. She is evidently worn down by excesses and irregularities, and will soon be worn out. Her face is sallow and wan, her frame is wasted, her voice is hoarse, her hearing is dull. She has enlarged hard glands in her neck and groin, scars at the angles of her nose and mouth, coppery tubercles about the forehead and eyebrows, a lump of gumous matter in the calf of the right leg, nodes on her tibiae, and open ulcers on her face and upon her legs. These ulcers are large, numerous, indolent, and characteristic. She makes no secret of her disease, and dates its origin several years ago. She “has had mercury,” and her gums bear the traces of it; her irritable tongue and stomach, her anorexia, and her wasting seem to warn us against the iodides. She took sarsaparilla, beginning with half a pint a day, and increased the dose to one pint daily. On this treatment her complexion cleared, the ulcers contracted and healed, she gained flesh and appetite, and in two months she was restored to something like good health. On account of the expense of the drug I often wished to change it for the iodides of iron and potassium, but having found the benefit of the sarsaparilla she begged me not to omit it, and recognized its virtues with the greatest gratitude. This girl was an out-patient, and therefore placed under no new conditions of food or rest.

The next patient whose case I will relate is now an in-patient, but I took her from a gentleman's house where she was much valued as a servant, and had been living with every comfort. I took her in on the 5th of February last, and drew general attention to the case and its treatment in order to test the drug once more for the purposes of this paper. The girl on admission was worn, wasted, and sallow; she had coppery tubercles about both eyebrows, about the *alæ nasi*, and the right angle of the mouth. Her hair was thin, and her scalp tender, and she had nocturnal pains. On the left cheek over the zygomatic process was a soft gumma about the size of a cob-nut. She dreaded its breaking upon her face, for such lumps had formed in the flesh of her arms and legs, and had burst, giving rise to large ulcers. She was now infested by such ulcers, so as to present a pitiable object. They were on both legs, both above and below the knee, and presented the characteristic punched-out appearance of syphilitic ulcers. They varied in size from that of a shilling to a crown-piece, and there were perhaps seven or eight of them on the two legs. She had been under medical treatment for some time before admission. I ordered her four ounces of decoction of sarsaparilla three times a day, intending to increase it to six ounces. The increase was, however, unnecessary, for she began quickly to improve in complexion, to gain flesh and strength, and to take food. Coincidentally with this the ulcers began to close, contracting from their edges towards the centre, the coppery tubercles faded, and the gumma in the muscles of the cheek died away. No local applications were used except simple dressings. I write at the end of one month from her admission, and she is well, or what she calls well. I should now advise for her a gentle course of biniodide of mercury for a week or two, followed by a prolonged course of iodide of potassium.

I will only select one more case from a large number of similar ones. Mr. —, a gentleman of fortune, who enjoyed every advantage in conditions of life and skilled advice, had never been able to shake himself free from an old syphilis. He had no cutaneous eruption of importance, but was spare, haggard, and sallow; his hair fell off, his appetite was capricious, his bowels irritable, and his strength deficient. He was liable also to neuralgias, which were really dreadful, often amounting to great

agony. They were chiefly cranial, but also of the nocturnal tibial variety. There were many irregularities of the cranium and of the flat bones. Mercury and iodides, though administered under first-rate advice both in England and in Germany, had failed to relieve him; for they were so ill borne that no continued course could be prescribed, whether combined with tonics and nutrients or alone. I advised him to lay in a quantity of sarsaparilla, and to have the decoction made at home, so that he might take it in quantities daily. The medicine agreed with him, and he tried it carefully. He took at most about two pints daily of the Pharmacopœia strength, and he took this for about three months. Altogether he took more or less sarsaparilla for about five months. He found his improvement so satisfactory, that I had no difficulty in persuading him to continue the treatment. His general nutrition improved first, and the "cachexia" abated; in the next place his neuralgic pains diminished and disappeared. Since this time nearly two years have elapsed, and he has remained healthy and vigorous beyond the average of men, being able to hunt four days a week and to carry out many important engagements without any signs of fatigue. Such is our mode of administering sarsaparilla at the Leeds Infirmary, and such are the cases which need it. I hope soon to hear that our practice has been found useful by our brethren elsewhere.

ON CHLORAL IN PHTHISIS, AND ITS ANTAGONISM TO THE POISONOUS EFFECTS OF CALABAR BEAN.

BY JOHN HUGHES BENNETT, M.D., F.R.S.E.

*Professor of the Institute of Medicine, and of Clinical Medicine in the University
of Edinburgh.*

WHAT has struck me with regard to the hypnotic effects produced by chloral, is the fact pointed out by Liebreich, that it causes sleep without exciting the pulse or respiration. In the majority of cases it produces no excitement or uneasiness, nor is it followed by headache, furred tongue, or feeling of depression. With a very few exceptions, indeed, it seems in moderate doses to occasion natural sleep. Under its influence I have seen rabbits motionless breathing tranquilly, and evidently fast asleep, who could be roused so as to take a few steps, or eat a little cabbage, and then, overcome by drowsiness, fall asleep again. The same power of being roused from a moderate dose occurs in the human subject. No doubt the somnolence can be augmented, by increasing the dose, until it becomes soporose or comatose, when stimulants fail to rouse. Of the intensity of this last effect in man, however, little is known ; but from what has been observed in the lower animals, there can be little doubt that sufficient coma can be produced to admit of operating without pain. Whether, however, chloral is so easily manageable as ether or chloroform remains to be seen.

The qualities I have described render chloral highly serviceable to the physician. Although in a few instances it has occasioned excitement before sleep, and headache afterwards, in the majority of cases it is not a narcotic but a pure hypnotic. The ill effects so common in the administration of opiates I have not witnessed on giving chloral at all. For example, the

pupil is not contracted more than in ordinary sleep. There is not, for the most part, on waking, the confusion of head, the sense of depression, the furred tongue, want of appetite, nausea or vomiting, suppression of the secretions or constipation, so common after giving opiates. It therefore occurred to me that it would be a most useful hypnotic in phthisis. Here it too frequently happens that cough, pains in the chest, and restlessness at night, if alleviated by opiates, and even by that excellent preparation chlorodyne, leave the patient so depressed, feverish, and weak, as to do more harm than good. Indeed in my own practice I have found that such is the loss of appetite, increased weakness, and emaciation that follow their use, that I never give them except in the last stages of the disease, and when, all hope of prolonging life having ceased, we choose the least of evils in procuring even unhealthy sleep. But matters are greatly changed when we are able to obtain the natural sleep that chloral produces. By its aid we can lull irritation, and give rest for a time, in many cases, without any injury whatever. I have recently made special observations on this point in nine cases of phthisis now under my care in the clinical wards, and have collected the experience of some of my colleagues. (See table, p. 264.)

I think it will be admitted that no kind of opiate would have produced such uniformly good, and so few bad results in twenty-one cases of phthisis, as is here shown to have been the effects of chloral. In three cases (2, 5, and 7) the individuals slept well habitually, and the remedy only intensified sleep without affecting the head, tongue, or appetite. In one case (case 8) it caused vomiting twice, when taken with cod-liver oil, but when dissociated from it produced no ill effect. In one case (case 4), in addition to cough and restlessness at night, there was considerable sweating, which was much alleviated by the chloral. To assure myself of this fact, it was given ten nights running, always producing good effects, and when stopped the sweating again increased. In one case (case 11) it produced excitement and a state approaching delirium, but the dose was 30 grains. In one case (case 18) the same dose caused slight headache in the morning. In one case also (case 16) the tongue was more furred afterwards. In all the other cases the relief to the cough

OBSERVATIONS ON THE EFFECTS OF CHLORAL IN CASES OF PHTHISIS.

No.	Name.	Lesion.	Age, Ward.	Dose.	Time of Administration	RESULT.				No. of Days taken subsequently.
						(a) Nervous System.		(b) Digestive System.		
						Sleep.	Head.	Tongue.	Appetite.	
1	Robert Nisbet . . .	Vomica at both apices (Crepitation at right apex . . .)	19	gr. xx	10 p.m.	Slept well all night.	Nothing.	No change.	Improved. (Not quite so good.)	9
2	James Quin . . .	Vomica at right apex . . .	29	Do.	Do.	Ditto	Nothing.	Do.	Do.	6
3	Peter Martin . . .	Softening at right apex . . .	39	Do.	Do.	Ditto	Ditto.	Do.	No change.	6
4	William McLachlan . . .	(Softening at right apex)	24	Do.	Do.	Ditto	Ditto.	Do.	Do.	10
5	Thomas Dixon . . .	(Softening at right apex) (slightly at left . . .)	59	Do.	Do.	Ditto	Ditto.	Do.	Do.	12
6	William Fen . . .	(Vomica at right apex) (softening (vomica?) at left . . .)	46	Do.	Do.	Ditto	Ditto.	Do.	Do.	5
7	Elizabeth Croley . . .	(Softening at both apices)	15	Do.	Do.	Ditto	Ditto.	Do.	Do.	5
8	Jessie Martin . . .	Vomica at left apex . . .	—	Do.	Do.	Ditto	Ditto.	Do.	Do.	9
9	Mary Prior . . .	Vomica at left side . . .	21	Do.	Do.	(Didn't sleep for three hours; then slept well)	Ditto.	Do.	Do.	1
Dr. BALFOUR'S cases.										
10	John Williamson . . .	Cavity both sides . . .	38	gr. xxx	Do.	Well	Ditto.	Do.	Do.	21
11	John O'Neil . . .	Ditto	18	Do.	Do.	(Head to be watched for the night, and slept all forenoon)	Ditto.	Do.	Do.	1
12	John Barry . . .	Ditto	57	Do.	Do.	Well	Ditto.	Do.	Do.	12
13	Mrs. McNeil . . .	Ditto	32	Do.	Do.	Ditto	Ditto.	Do.	Do.	12
14	Mary Duncan . . .	Ditto	25	Do.	Do.	Ditto	Ditto.	Do.	Do.	12
15	Mrs. Martin . . .	Incipient	54	Do.	Do.	Ditto	Ditto.	Do.	Do.	1
Dr. STEWART'S cases.										
16	James Baxter . . .	Cavities both sides . . .	35	Do.	Do.	Ditto	Ditto.	Purged.	Do.	2
17	Wm. Hamilton . . .	Incipient	21	Do.	Do.	Ditto	Ditto.	No change.	Do.	12
18	John Ross . . .	Advanced	18	Do.	Do.	Ditto	Slight headache	Do.	Do.	12
19	Robt. S. Lamban . . .	Incipient	42	Do.	Do.	Ditto	Nothing.	Do.	Do.	12
20	Susan Martin . . .	Vomica, left side . . .	55	Do.	Do.	Ditto	Ditto.	Do.	Do.	1
21	Henry Nisbet . . .	Incipient	42	Do.	Do.	Ditto	Ditto.	Do.	Do.	2

and restlessness at night, with the production of sound sleep, was most marked, while the head, tongue, and appetite were in no way affected.

For the same reasons that chloral is useful in phthisis, it has been found beneficial in certain cerebral diseases, in which opium is contra-indicated. In another class of cases, however, the valuable qualities of the latter drug in checking secretion, while acting as a sedative, will give it superiority. I refrain, however, from entering into a consideration of the numerous diseases in which the drug has been administered, and which have been recorded by Liebreich and several others. The first step, it appears to me, ought to be a determination of its physiological action; and this, so far as experiment and observation have yet gone, points to its being, in moderate doses of 20 to 30 grains, the purest hypnotic we possess. In doses of 30 to 60 grains it causes excitement, giddiness, and headache more frequently.

OBSERVATIONS TO DETERMINE THE ANTAGONISM BETWEEN CHORAL AND CALABAR BEAN.—In five experiments on as many rabbits, fatal doses of the extract of Calabar bean were injected hypodermically, after the full effect of chloral was produced, with a view of determining how far the poisonous influence of the former was counteracted by the latter. In every case the convulsions were checked and life prolonged, but death ultimately resulted.

Experiment 6.—Three quarters of a grain of Calabar bean extract hypodermically injected killed a full-grown healthy rabbit, with violent general convulsions, in six minutes.

Experiment 7.—Repeated in a similar rabbit, after it had taken fifteen grains of chloral. There were no general convulsions, and death occurred in 2 hours and 53 minutes.

Experiment 8.—Repeated in a large healthy rabbit weighing 6 lbs. after it had taken fifteen grains of chloral. No general convulsions, but insensibility and profuse salivation, paralysis, and general muscular twitchings; died in $1\frac{3}{4}$ hours.

Experiment 9.—Repeated in a similar rabbit, weighing 6 lbs. The same phenomena were produced, and lasted $3\frac{1}{4}$ hours, when the animal slowly recovered.

There can be no doubt that three quarters of a grain of the Calabar bean extract employed, made by the Messrs. Smith of this city, would kill any rabbit in from six to eight minutes. The influence of chloral in counteracting this result was most marked, as may be judged of by the above experiments. It has yet to be determined how far other hypnotics and narcotics may, like atropia, as shown by Dr. Fraser, and like chloral as in the above experiments, produce a similar effect.

“NOTE” ON THE USE OF HYDRATE OF CHLORAL.

BY JOHN W. OGLE, M.D.

Physician and Lecturer on Pathology, St. George's Hospital.

HAVING for several years (almost, in fact, since Liebreich's observations on this agent were made known in England) made frequent trials of the effect of chloral, both in hospital and in private practice, I have thought it might now be opportune to add my testimony to that of others in regard to the action of this remedy. In the *Lancet* for October 16th last, a statement was made that I had given the chloral with good results in various cases and in sundry forms of disease. At that date, partly from deficient acquaintance with its properties, and in part owing to its rarity and consequent dearness,¹ my doses ranged from four or five grains (for the adult) up to twenty grains, but did not extend beyond. In a slight case of delirium tremens twenty grains had acted well in procuring sleep and quiet, but much less quantities had proved to be serviceable doses in allaying pain and irritation in chronic peritonitis, in rheumatism, acute and chronic. Since then I have given a greater scope to its trial, and have constantly exhibited it in doses up to sixty grains, in several cases commencing with that quantity; and altogether must have given it to between thirty and forty different cases, in many instances for several days in succession. Such being the case, I cannot, of course, give the details of my cases in a mere “note” like the present one; nor, indeed, I imagine would any good follow if I did, inasmuch as, with reference to the effects of the remedy, I should merely have

¹ At that time it cost 12s. per oz., and was procured from Berlin by Messrs. Bullock and Reynolds; at present it can be bought for 1s. 6d. per oz.

to repeat over and over again the same observations, and thus only weary the reader.

In many cases of acute rheumatic fever, even when sleep had previously been for several nights absent or nearly deficient, the chloral has proved most useful in half-drachm doses ; and in three or four cases of acute gout the pain and inflammation of the parts have quickly and greatly yielded to it. In subacute and muscular rheumatism similar results have followed. Considering the supposed condition (diminished alkalinity, &c.) of the blood in cases of rheumatic fever, it was interesting to note that it did not appear more necessary to give larger quantities of chloral than in other conditions when the blood was deemed more alkaline. In some cases of scarlet fever much rest and comfort and sleep have followed its use in fifteen and twenty grain doses. In neuralgia, and in some diseases of the nervous centres in which pain was troublesome at the periphery, it has proved very useful, but not pointedly so when the pain has been excessive. For example, within the last few days I tried it in the case of an adult suffering great pain in the abdomen, apparently from a sprain (the spine being probably implicated), causing almost complete sleeplessness at night for several weeks ; but sixty grains only caused slight relief. Subcutaneous injection of one-quarter grain of morphia along with one-sixtieth grain of sulphate of atropia caused, on the subsequent night, five hours of good repose.

In one or two cases of want of sleep from over-exercise of the mind (the result of study and teaching) I have found it most useful, and also in the want of sleep of old age. I have not noticed that the drug has had less effect on those who habitually took large quantities of alcoholic drinks than upon others.

In only two cases have any evil or unpleasant effects followed its administration, viz. peculiar sensations and uncomfortable-ness about the head. In none has vomiting resulted ; nausea in some cases has, apparently from distaste, when the chloral was only given in plain water. Dr. Tuke, of Chiswick, has, however, informed me that in a case of insanity its use appeared to be followed by much mental disturbance ; and in a case of mania *e potu* which I saw at Clapham with Mr. Taylor, that gentleman said he had twice given chloral in the case without any good result. He had only given it, I think, in twenty-grain doses. Once or

twice I had it injected subcutaneously, but so much local irritation followed that I determined not to repeat its injection. In one case much tingling down the arm which was injected followed. Hitherto I have not had occasion to give it in the form of enema.

But the cases in which I have derived the most satisfaction in giving the chloral have been those in which, by their nature, preparations of opium and morphia have been contra-indicated, as, for example, certain cases of cardiac disease, certain cases of brain disease, in which cerebral congestion appeared to be imminent; but especially cases of so-called uræmic poisoning, in which one naturally feared to risk the use of opium or its derivatives.¹ Its effects in one case of mania, convulsions, and at times semi-coma, in connection with renal disease and syphilis, were very striking.

In many of such cases, general nervous tranquillity and sleep of a most comfortable kind, and frequent subdual of dyspnoea and painful symptoms, have attended its use. In combination with digitalis its effects in some cases of heart disease are often peculiarly satisfactory. As respects the mode of its exhibition, owing to its unpleasant flavour, and in some cases nauseating taste, I have generally given it in the compound infusion of orange with a few drops of spirits of chloroform or spirit of peppermint, or in some recent cases, as recommended by Mr. Squire, with syrup or tincture of tolu. This is a most pleasant combination. In two cases of acute gout, in which I gave it in twenty-grain doses, continued every four hours for several doses, I found no alteration in temperature resulting from its use; neither in these cases, although the acute pain, &c. was diminished, did any manifest hypnotic effect follow.² I suppose I

¹ I cannot help stating my belief that in kidney disease with uræmic poisoning we may be *too* cautious as regards giving opium. I lately saw a case in which very distressing symptoms in such a condition were relieved by a morphia draught, which I was long in assenting to. I lately attended the case of a lady with renal dropsy (with Dr. White), who had violent pain on breathing down one side of the chest, preventing sleep, in whom morphia, given by Dr. White, acted "like a charm."

² I propose trying it in several other acute diseases, and in fever of various kinds. I may here also mention the case of a gentleman who was dying with renal disease, in whose case the medical man withheld calomel as an aperient, fearing pytalism. Much uneasiness in abdomen existed, and was all cleared off by a good dose of calomel given by another attendant.

am not wrong in stating that when great pain has to be antagonized by sedatives, we often find that it is alleviated without any correspondent and positive sleep being induced.

Of course it has also not infrequently happened, as often occurs when other sedatives are given, that in certain idiosyncrasies, and under certain circumstances, the chloral does not answer expectations.

In the above observations I have merely given a general *résumé* of my own experience of the use of this remedy. I have not up to this time had any experience of its properties in the case of children.

I will bring this note to an end by quoting a letter which I received from Dr. Miller, of Blackheath, referring to the use of chloral in the case of a member of a family with which I am acquainted. His words (written November 29th last), which I have his permission to quote, are as follow :—

“Mr. T—— is 82, of a very excitable, nervous temperament, very vigorous for his age in both mind and body, but afflicted with an irritable bladder and by very bad nights. This want of sleep, which also exists in other members of the family, has existed for many years, but is now much aggravated by the state of the bladder; so that when excited by business or other anxiety, the night is passed in efforts at micturition every ten minutes or quarter of an hour. Every possible narcotic has been prescribed for him at various times, either without any effect, or, in the case of opium and its derivatives, with the production of so much nausea and discomfort afterwards as to be practically useless. *Nepenthe* agreed the best, but has been taken so long by Mr. T—— as to have no effect in inducing sleep. Bromide of potassium has failed after constant trials, even in two-*scruple* doses. I was glad therefore to try the effect of chloral, beginning with twenty-five grains in a little syrup and water at bedtime. This quantity given on two occasions produced considerable comfort and quiet, but did not much increase the actual sleep. Thirty grains were given after a day or two's interval, producing more sleep than he ever remembered to have had at one time. He slept very soon after taking it at 10 P.M., and awoke after about three hours, only to sleep again till about half-past 6, and felt very drowsy when rising (about 7). No

bad effects that I could observe have followed its use. The calls to empty the bladder were of course greatly diminished at night, as was also the quantity of urine; so much so as to excite some alarm in Mr. T——'s mind as to the possible effects on his constitution. The chloral was taken sometimes two or even three nights in succession, and then left off for as many; the good effects being as conspicuous as ever until last night, when, after its omission for two nights, it, without apparent cause, produced no appreciable effect either in inducing sleep or restraining the action of the bladder. The chloral has been taken now eleven times, but I fear is losing its effects unless increased. The fresh and cheerful aspect of my patient after a dose on the previous night, as compared with his appearance after a bad night, was most striking. No loss of appetite or constipation ever ensued.

"I trust you will excuse this imperfect account of my very limited experience of what appears to be a very valuable drug."

I have not since heard whether the chloral was continued further in this case.¹

¹ Since writing the above, I have received the following note from Dr. Take:—

"I ordered it for a gentleman long the subject of acute melancholia, who never could sleep without morphia, and in whose case three grains of morphia failed to procure more than three or four hours' sleep. The exhibition of twenty-five grains of the chloral hydrate induced in this case profound sleep for nine hours, but on awaking his family were much alarmed at the state of collapse he appeared to be in; his medical man was sent for, and I saw him later. I found him then recovered. He has since taken fifteen grains nightly, with the result of becoming quite well. The class of case I have used it in has been restless mania, and especially in puerperal cases I know of no sedative so safe or so certain in proper doses. I find the tolerance of it very different in different cases, but twenty grains are quite enough for the first dose. I saw in a case of acute mania, last week, twenty grains produce eleven hours' sleep."

CONTRIBUTIONS TO THE PATHOLOGY AND THERAPEUTICS OF DIABETES.

BY A. DUPRÉ, PH.D.

Lecturer on Chemistry at Westminster Hospital.

ACCORDING to the theory, most generally received, diabetes is caused mainly by a want of oxidizing power in the blood, the disease being intensified, perhaps, by an increased production of sugar or glycogenic substance in the liver. This sugar constantly thrown into the circulation, instead of being oxidized as in health, accumulates, it is supposed, in the blood, and is discharged through the kidneys, these organs simply removing the sugar contained ready formed in the blood.

With a view of testing, if possible, the correctness of this theory, I have, some time ago, taken an opportunity of carefully examining the urine of a patient suffering from diabetes: first while under a chiefly animal diet; secondly, while under the same diet with the addition of various amounts of honey. These experiments, instituted by me, seem to point out an explanation of this disease differing from that above alluded to. I therefore beg to place them before the medical profession in the hope that the view they bear on may receive some further elucidation from others.

Starting from the above theory, most medical men exclude sugar from the diet of patients suffering under diabetes, as well as farinaceous food, on the ground that such food, being simply converted into grape-sugar, is discharged as such through the kidneys, thereby materially increasing the quantity of urine and sugar excreted, and throwing an additional amount of unprofitable work on an already enfeebled constitution. Some medical men, however, recommend the administration of sugar to such

patients, and they allege that it does not materially increase the amount of sugar discharged. But as far as I am aware, the exact nature of the sugar excreted when sugar is either included in, or excluded from, an otherwise animal diet, has never been investigated.

True diabetic sugar is identical with so-called grape-sugar; it has the same elementary composition, is like it fermentable, reduces cupric salts from their alkaline solution in the same definite proportion, and turns the plane of polarized light to the right to the same extent (molecular rotating power, 56). It is obvious, therefore, that if the patient be given either grape-sugar, or substances convertible into grape-sugar, it will be impossible to determine whether the sugar found in the urine is directly derived from the substances given, or whether it comes from a totally different source. In order, however, to decide the question—Is diabetes caused by a want of oxidizing power of the blood or not?—it would obviously be of great importance to be able to settle this point.

For such a purpose we should require a sugar closely allied to grape-sugar in general character, and yet readily distinguishable from it. Such a sugar should be traceable after its administration in the urine of the patient, supposing the blood to have lost its oxidizing power.

Fruit-sugar, in great measure, fulfils these conditions; it is identical in composition with grape-sugar, is not convertible into it, is closely allied to it chemically, is certainly not more readily destroyed by oxidation or fermentation, while both reduce cupric salts in exactly the same proportion. *However, fruit-sugar turns the plane of polarized light to the left about twice as much as grape-sugar turns it to the right* (molecular rotating power, 106).

A given quantity of a mixture of these two sugars, when estimated, as usual, by the amount of cupric salt reduced, will thus yield the same quantitative result, whatever be the proportion in which the two sugars are mixed; the optical test, however, will give a different result for every different mixture. Thus a solution containing 4 per cent. of grape-sugar and 2 per cent. of fruit-sugar will show 6 per cent. of sugar by the copper test, while the optical test will indicate little or no

sugar. The 2 per cent. fruit-sugar turning about as much to the left as the 4 per cent. grape-sugar to the right, the effects neutralize each other. Or again, 5 per cent. grape-sugar and 1 per cent. fruit-sugar will also yield 6 per cent. sugar to the copper test, while to the optical test it will exhibit an effect equal to 3 per cent. grape-sugar only; in other words, the presence of 1 part of fruit-sugar in such a mixture will neutralize the optical effect of about 2 parts of grape-sugar, and thus the amount of sugar as found by the copper test will exceed the amount found by the optical test (assuming the sugar under examination to be pure grape-sugar) by about three times the quantity of fruit-sugar present.

With these facts present in my mind, I have, by experimenting with solutions of grape-sugar (employing Fehling's copper solution for the chemical testing, and Professor Jellet's beautiful instrument for the optical examination, and taking in each case the mean of several carefully conducted experiments), convinced myself that the results obtained by both methods will agree with each other to within $\frac{1}{4000}$ or less of the amount of sugar present, provided the solution tested contains 5 per cent. and upwards of sugar. Now, as before explained, an admixture of $\frac{1}{10000}$ part of fruit-sugar to 1 part of grape-sugar would cause an apparent difference of $\frac{3}{10000}$, or nearly $\frac{1}{3000}$ part between the optical and chemical test in favour of the latter. Even this difference is already greater than the above given experimental error (viz. $\frac{1}{4000}$), and any greater addition than this would, therefore, certainly be detected. We have thus a means, by combining the optical and chemical methods of testing, to recognize with certainty the admixture of even a very small proportion of fruit-sugar to grape-sugar.

The patient, a man aged 59, the examination of whose urine is recorded in the following experiments, had been admitted into the hospital on February 4th, while suffering from diabetes. He at first passed a very large quantity of urine (13 to 14 pints) of high specific gravity, but after having been put upon a diet consisting of 8 ozs. of meat, 2 eggs, $\frac{1}{2}$ lb. of gluten bread and greens, sugar and farinaceous food being carefully excluded, the amount as well as the specific gravity of the urine had considerably diminished.

On Thursday, March the 5th, at noon I began the collection of urine for my experiments. The urine was always collected from noon one day to noon the next, the date given being that of the second day. During the time when the patient was taking sugar (his diet remaining otherwise unchanged) it was of course so arranged that he should take his prescribed quantity of sugar within the twenty-four hours during which the urine was collected. The experiments embrace, firstly, two days on which, and during at least four weeks previously the patient had taken no sugar whatever; secondly, five days during which he took in all 32 ozs. of honey; and thirdly, two more days on which no sugar was taken.

The source of the fruit-sugar was honey, which, according to analysis, consisted of—

Fruit-sugar	28 per cent.
Grape-sugar	44 ..
Water, &c.	28 ..
	<hr/> 100

The examination of the urine itself was conducted as follows. The total quantity passed in the twenty-four hours was measured and thoroughly mixed. 100 cc. of it were then measured into a flask, 20 cc. acetate of lead (one part of acetate in ten of water) added, and the mixture made up to exactly 200 cc. After standing some time the mixture was filtered, the filtrate shaken up with a little animal charcoal and again filtered, when a perfectly colourless and bright filtrate was obtained.¹ In this filtrate the sugar was estimated by means of Jellet's saccharometer, on the assumption of its being pure grape-sugar. Next, 20 cc. of the same filtrate were made up, with distilled water, to 300 cc., and in this diluted solution the sugar was estimated by Fehling's copper test. If then the percentage of sugar found by the optical test is multiplied by 2, and that found by the copper test by 30, the percentage of sugar present in the urine is obtained; from which, and the total quantity of urine passed, the amount of sugar discharged

¹ Previous experiments had shown me that neither the acetate of lead nor the animal charcoal, employed as above, removed any appreciable amount of fruit or grape sugar from a solution.

in the twenty-four hours can be calculated. Both processes will give the same result (within the above given limits of error) if the sugar present be only grape-sugar; the presence of even a small quantity of fruit-sugar will, as before described, produce a difference in the two results, the optical test showing less sugar than the chemical test.

During the last three days of the experiment the total amount of urea discharged in the twenty-four hours was also estimated. The analytical results are arranged in the following table:—

Date.	The Honey taken in 24 hours contained grms. of		Urine passed in 24 hours.	Percentages of Grape-Sugar estimated		Total quantity of Sugar in grms. excreted daily according to		Total amount of Urea in grms.
	Grape-Sugar.	Fruit-Sugar.		Chemically.	Optically.	Chemical Test.	Optical Test.	
March 6	—	—	Cubcent. 4,260	7.018	7.011	298.96	298.66	—
7	—	—	4,260	7.500	7.495	319.50	319.28	—
9	48.90	32.49	4,514	7.590	7.597	344.89	345.21	—
10	48.90	32.49	4,260	7.590	7.495	319.50	319.28	—
11	97.82	64.98	4,260	8.106	8.094	345.31	344.80	—
12	97.82	64.98	5,680	7.791	7.790	442.53	442.47	—
13	97.82	64.98	5,396	8.330	8.340	449.48	450.03	23.76
14	—	—	6,250	8.049	8.055	503.06	503.44	50.60
16	—	—	4,260	7.839	7.845	333.94	334.19	38.76

An examination of the foregoing table will show that in every case the chemical and optical tests give, practically, the same results, and consequently no appreciable amount of fruit-sugar was excreted on any one of these days. If on the 11th, 12th, or 13th, as little as 1 per cent. of the amount of fruit-sugar taken (viz. 0.6498 grm.) had found its way into the urine, it would have occasioned a difference of nearly 2 grms. between the total amounts of sugar found by the chemical and optical tests; an amount which a simple inspection of the table, for those days on which no honey at all was taken, will show to be considerably greater than the experimental errors. We may therefore safely conclude that less than this proportion was excreted, and so far the blood would not seem to have lost its oxidizing power for sugar.

The table further shows that the amount of sugar taken on the 9th and 10th (4 ozs. of honey) occasioned no material

increase either in the percentage or in the total amount of sugar excreted. On the other hand, double this quantity (8 ozs. of honey) taken on the 11th, 12th, and 13th, considerably raised the percentage as well as the total amount. Indeed, on March the 12th and 13th the increase exceeds in amount the total quantity of grape-sugar consumed; and on March the 14th, when no honey had been taken, the quantity of sugar excreted is even higher. This increase can therefore certainly not be derived solely from the sugar taken, and may perhaps be accounted for by the greater amount of liquid drunk by the patient (on account of the thirst produced by his eating the honey), which considerably increased the quantity of urine discharged, and produced a corresponding augmentation of the sugar.

Lastly, it will be observed that on March the 13th the total amount of urea was only 23·76 grms., whilst on March the 14th, the first day after the cessation of the honey diet, it suddenly increased to 50·6 grms., sinking to 38·76 grms. on the 16th. This latter amount is somewhat in excess of the normal quantity, agreeing with the generally observed fact that the urea excreted by diabetic patients is in excess of the normal amount; the amount observed on the 13th is, however, in striking contrast with it, being considerably below even the normal amount.

Should future experiments confirm this remarkable effect of a honey diet, it will not be easy to reconcile it with the current ideas regarding the malady. For, why should the 163 grms. sugar, taken in the honey, reduce the urea to considerably below the normal amount, while the upwards of 300 grms. sugar supposed to have passed through the blood in the same space of time left it above? Does not this observation also point to the conclusion that the sugar found in the urine has not previously existed, ready formed, in the blood, but has been formed only in its passage through the kidneys? Moreover, if the urea really represents tissue waste, would not a confirmation of this fact show the correctness of the practice of some physicians of giving sugar to diabetic patients?

The remarkable reduction in the amount of urea discharged when large quantities of sugar are consumed has previously

been shown by F. Hoppe (*Arch. f. Path. Anat.* x. pp. 144-169), in the case of dogs fed either with meat and sugar, or with sugar alone. I have myself observed that in healthy persons, taking ordinary mixed diet, the exclusion of sugar from such diet, leaving it otherwise unaltered, perceptibly increases the amount of urea.

It also appears to me that in the received theory sufficient regard has not been paid to the fact that the percentage of sugar found in the blood of diabetic patients is always extremely small (according to Lehmann, never more than 0·047 per cent., and, in one case I had an opportunity of examining, certainly less than 0·04 per cent.), and yet the quantity of blood passing through the kidneys in twenty-four hours must, if this theory be correct, contain considerably more sugar than is found in the urine discharged during twenty-four hours, since it would be an extravagant assumption to suppose that all the sugar contained in the blood is removed during its rapid passage through the kidneys. The sugar actually found in the blood and other fluids and tissues of the body might be perfectly explained as due to simple absorption from the kidneys, or even bladder, since it has been shown by Dr. Bence Jones and myself how rapidly substances are diffused throughout the entire body, in whatever manner they may be brought into the circulation.

However, I must leave such considerations to those better acquainted with the entire aspect of this disease than myself, and only hope that the experiments here recorded make out a case sufficiently strong to induce others to reconsider the current theory, and perhaps repeat and extend these experiments, as I have myself no opportunity to continue them.

ON THE USE OF THE BROMIDES OF POTASSIUM AND AMMONIUM IN CASES OF CONTINUED FEVER COMPLICATED WITH SLEEPLESSNESS, CONVULSIONS, AND OTHER CEREBRO-SPINAL SYMPTOMS.¹

BY WILLIAM MOORE, M.D.

University of Dublin; King's Professor of the Practice of Medicine in the School of Physics in Ireland; Physician to Sir P. Dun's Hospital, &c.

DURING my recent period of duty at Sir P. Dun's Hospital twenty-one cases of continued fever (exclusive of measles, scarlatina, and acute rheumatism) came under my care. Of these twenty-one cases five were typhus, of which one proved fatal; the remaining sixteen were enteric.

The first case I shall detail, which was carefully reported by Mr. William R. White, was that of Mr. C——, who was admitted into the pay ward on the 4th November, 1869, with well-marked typhus (about seven days in fever). He had great agitation and subsultus when spoken to or touched; he was very delirious; his eyes were red and suffused, the pupils small. He was ordered eight ounces of wine with beef-tea.

On the 5th he was in a very excited state, having slept none the night before; he was constantly trying to get out of bed.

On the 6th he was very delirious and restless, and succeeded in getting out of bed, and running about the ward. He had slept none during the night. The wine was increased to twelve ounces.

On the 7th he was much in the same state as the day previous; had slept none, the agitations and hyperæsthesia was very great. He was ordered a drachm of the tincture of hyoscyamus in camphor mixture at bedtime.

¹ Read at a meeting of the Medical Society, College of Physicians.

On the 8th he did not seem to know any one, and kept picking the bedclothes. The hyoscyamus seemed to have quieted him somewhat during the night, although he did not sleep. Same stimulants continued, and to get fifteen grains of the bromide of potassium at bedtime.

On the 9th the patient slept several hours at intervals during the night, and was conscious; the floccitatio had disappeared; the agitation and injected state of the eyes were much less: he did not remember a single incident since his admission. From this date his convalescence was established, and he left the hospital on the 20th of November.

CASE II., which was reported by Mr. Richard Lloyd, resident medical scholar, was that of Mrs. Elizabeth C——, aged 30, housekeeper, who was admitted into Sir P. Dun's Hospital on the 13th November, 1869, labouring under typhus fever of about eight days' duration.

On the 14th she was dusky and maculated; the eyes were "ferrety;" the teeth and lips covered with sordes. She was restless, sleepless, and very delirious, with floccitatio, and involuntary passing of feces and wind; altogether a most unpromising case. She was ordered a table-spoonful of whisky in water every hour, and beef-tea, the head to be sponged, and fifteen grains of the bromide of potassium in an ounce of camphor mixture to be given at bedtime.

On the 15th there was no improvement in her condition; the whisky was increased to a table-spoonful every half-hour, and the bromide of potassium was given at bedtime.

On the 16th she had some sleep during the night, and was holding her ground. The same treatment was continued, with the bromide of potassium at bedtime.

On the 17th had a quiet night, some sleep; still passing under her, but in other respects improved. Bromide of potassium to be repeated at bedtime.

On the 18th the patient was quite conscious; she slept several hours during the night. From this date the stimulants were diminished, and the bromide of potassium was omitted, and she left the hospital, after a tardy convalescence, on the 19th December.

CASE III., reported by Mr. W. R. White, was that of James

T—, plumber, aged 27, who was admitted into Sir P. Dun's Hospital on the 16th December last with well-marked typhus.

On the 17th he was delirious, and had slept none; the eyes were injected, the pupils contracted; his pulse was 120, his temperature 104° , and his respiration 30. He was ordered 12 ounces of wine during the twenty-four hours, and beef-tea, and to get 20 grains of the bromide of ammonium in camphor mixture at bedtime.

On the 18th he was not quite so delirious; same treatment, with the bromide of ammonium at bedtime. The bromide of ammonium was repeated on four consecutive nights; the patient had a good recovery, and he left the hospital on the 7th of January last.

CASE IV.—This case exemplifies a complication which by all authorities on fever is admitted to be the most alarming—viz., the presence of convulsions.

The patient was admitted with all the symptoms of well-marked enteric fever. He had the rose-coloured spots, cæcal gurgling, with tympany and diarrhœa; when comparatively late in the fever, convulsions and other cerebro-spinal symptoms manifested themselves.

The details of this case, which was carefully watched and reported by Mr. Reuben Harvey, resident medical scholar, are as follow:—

Peter O'C—, aged 18, a compositor in the office of the *Evening Post*, was admitted into Sir P. Dun's Hospital on the morning of the 14th December last, with all the symptoms of enteric fever, and as far as we could learn he was about eleven days in fever. He had been a healthy young man, with no tendency to epilepsy or nervous disease of any kind. On admission his pupils were dilated, the eyes were clear, he was tender on pressure over the ilio-cæcal region, slightly tympanitic, and had diarrhœa; numerous rose spots were visible over the abdomen and chest, and his temperature was $103\cdot6$; pulse 116, respiration 20. He was rather inclined to sleep, and for several days seemed to be getting on favourably, and the diarrhœa ceased; getting eight ounces of wine.

On Saturday the 18th the bowels were twice moved, but he presented no other symptoms calculated to cause any special

anxiety. On Saturday night, about half-past ten o'clock, Mr. Harvey noticed the patient lying on his back, low down in the bed, with his arms folded over his chest; his breathing was rapid and irregular, a circumstance which Mr. Harvey had noticed during the afternoon, and had found no chest complication to account for it. When spoken to he made no reply, nor did he stir, but when turned on his side spoke a few words and swallowed some whisky in milk. A blister was applied to the nape of the neck. About three o'clock on Sunday morning he was unable to swallow, and his respiration was still more hurried, and there was great restlessness and subsultus, with nasal stertor, injected eyes, and somewhat contracted pupils. He moved his eyes with great rapidity, and would swallow nothing, and lay with his head retracted. The head was now shaved, and a blister was applied over the vertex, to all which appliances he seemed insensible. His feet and hands were hot. He remained in this unconscious state till 10 A.M. on Sunday, when he opened his eyes and took some drink. He now regained his consciousness so far as to speak to the nurse and a friend; still he passed everything involuntarily; it was impossible to obtain a sample of urine for examination. The blister over the vertex was dressed with mercurial ointment. Wine increased to twelve ounces, with four ounces of whisky. At 6 P.M. on Sunday he suddenly relapsed into the same unconscious state, with well-marked opisthotonos. He now had twenty grains of bromide of ammonium, which was got down with great difficulty, and he passed a better night.

On Monday morning he had a series of convulsions, which lasted over several hours; these were attended with involuntary passing of feces and urine. On this night (Monday) the twenty grains of the bromide of ammonium was repeated, and on Tuesday night, during both of which days he had occasional intervals of consciousness.

On Wednesday the fits returned, and at 11 A.M. and at 4 P.M. he had twenty grains of the bromide of ammonium, and that night got some sleep. On Thursday he again relapsed, and could not answer any questions, but was able to swallow. Twenty grains of the bromide of ammonium was now given three times a day. On Friday the same treatment was con-

tinued; he made an effort to answer questions, but still passed his urine under him. A small quantity of urine was with difficulty obtained; its specific gravity was 1·021, and it contained no albumen. The patient slept the greater part of Friday night, and on Saturday he could answer any questions he was asked; took greedily what was given to him, and ceased to pass under him. On Sunday the cerebro-spinal symptoms disappeared, the bromide was discontinued, and he had a favourable and comparatively speedy convalescence.

The maximum temperature in this case was 103·7; pulse, 120; respiration, 48.

A PROGNOSTIC AND THERAPEUTIC INDICATION IN EPILEPSY.

BY QUÆRENS.

“Oft o’er my brain does that strange fancy roll,
Which makes the present (while the flush doth last)
Seem a mere semblance of some unknown past,
Mixed with such feelings as perplex the soul
Self-questioned in her sleep ; and some have said
We lived, ere yet this robe of flesh we wore.”—COLERIDGE.

“Moreover, something is or seems
That touches me with mystic gleams
Like glimpses of forgotten dæmons—

Of something felt, like something here ;
Of something done, I know not where ;
Such as no language may declare.”—TENNYSON.

“We have all some experience of a feeling which comes over us occasionally, of what we are saying and doing having been said or done before, in a remote time—of our having been surrounded, dim ages ago, by the same faces, objects, and circumstances—of our knowing perfectly what will be said next, as if we suddenly remembered it !”—*David Copperfield*.

LAST year I had the misfortune to become, for the first time in my life, subject to occasional epilepsy. I well remember that the sensation above described, with which I had been familiar from boyhood, had, shortly before my first seizure at a time of over-work, become more intense and more frequent than usual. Since my first attack, I have had only few recurrences of the feeling in question. On two occasions, however, it was followed next day by an epileptic seizure, and I have since treated its occurrence as an indication for immediate rest and treatment.

There seems to me a twofold therapeutic interest in this experience. First that, whatever pretty suggestions Coleridge and

Tennyson may make to account for it, and however universal its occurrence may be regarded by Dickens, it probably ought to be regarded as showing disturbance of brain-function; and that, perhaps, its recognition and removal might sometimes prevent the development of a more important disorder. Secondly, that inquiry in cases of epilepsy may detect a something of this sort, put aside as not being of sufficient consequence to speak of; and yet in truth being a minimised form of *petit mal*, warning to precautions against a larger seizure.

ON THE DIETETIC AND MEDICINAL USES OF WINES.

BY THE EDITOR AND STAFF.

PART I. ON THE PLACE OF WINES IN THE DIET OF ORDINARY LIFE.

(Continued from p. 224.)

It was shown in our last paper, that there is a great tendency in the customs of modern middle and upper class society to introduce modes of wine drinking which would easily involve people in habits of alcoholic excess, though such an idea might be far enough from their wishes or intentions.

It is very obvious that the multiplication of alcoholic drinks, with different flavours, each tempting in its turn, must lead the sharer in convivial feasts to forget how much he has already drunk; more especially if (as is usually the case) he has no accurate knowledge of the alcoholic strength of the liquors which he takes. And even in every-day life, it cannot be easy for those who adopt the common plan of drinking at least two, and generally three, separate alcoholic liquors in the course of the day, to regulate their allowance of alcohol with anything like nicety. It is therefore much to be desired that people may be educated in the direction of using only one alcoholic drink; at least for every-day consumption. The choice of this one drink must in each individual case depend upon a number of other considerations besides mere alcoholic strength, and these will be discussed further on; at present we have to point out those drinks which are suitable, in the single matter of strength, to be selected as the only alcoholic beverage.

What we have practically to consider is the possibility of selecting some alcoholic fluid which shall be weak enough—either when taken neat, or with only so much water as will not

make it distasteful—to enable us to drink so much of it as will satisfy all needs for fluid at lunch and dinner (or dinner and supper with folk of early habits), without producing any of the injurious effects of alcohol. Weak beers would, of course, very well fulfil these requirements; for instance, a sound light table-beer, containing about 3 per cent. of absolute alcohol. But to a large number of persons the quantity of such beer that would satisfy thirst, and also prove sufficiently stimulant, would not be readily digestible; or, if it did not disorder primary digestion, would cause disagreeable after-consequences. Especially to persons of a gouty constitution, such a regimen would be most unwholesome; also to many persons with rheumatic tendencies, on account of the sugar and dextrine which some light beers contain. Beers, again, cannot be mixed with water and retain their agreeable flavour.

It is amongst the class of natural wines, averaging not more than 10 per cent. of absolute alcohol, that we must seek the type of a universal alcoholic beverage for every-day life. If we turn to the most recent analyses (the very careful work of Dr. A. Dupré, of the Westminster Hospital), we find two kinds of wine which, as far as alcoholic strength is concerned, meet the ideal want—viz., a Rhine wine at $9\frac{1}{2}$ per cent. alcohol, and a claret at $8\frac{1}{2}$ per cent. Such wines are easily procurable, and we may say that we have, in either of them, a beverage which, alone or diluted with a certain amount of water, would at once satisfy all needs for liquid with the principal meals, and all needs for alcohol, in the most convenient and agreeable way. A bottle a day of either of these wines for an actively employed adult, and a proportionately less quantity for those whose life is more sedentary, would very well represent the allowance of alcohol which may be said to suit best the standard of ordinary health. Unfortunately, however, for persons of moderate means the German wines, in the present state of prices, are practically out of the field as *beverages*. It is quite possible (*experto crede*) to procure in London an admirably sound ordinary Bordeaux for 12s. a dozen (alcoholic strength 8 to 9 per cent.); but a German wine of anything like equal merit would cost twice as much. The same may be said respecting Hungarian, Burgundian, and Greek wines, besides other objections to be noticed hereafter.

Practically, then, those who wish to adopt the plan of drinking all their alcohol in the shape of one wine, will probably do best with Bordeaux, which is also, *par excellence*, the wine which may be mixed with water (of course we speak of the humbler growths) without spoiling. We maintain that for the hard-working student, politician, professional man, or busy merchant, there is no better arrangement possible than that of taking, as the regular daily allowance, a bottle of sound ordinary wine of Bordeaux: and that the number of persons with whom such a diet really disagrees is very limited; but on the latter point we shall have more to say hereafter, in discussing the other ingredients of wines. It may be added that no other wines which the world produces are capable of yielding, day after day, such unwearied pleasure to the palate, as the sound ordinary wines of Bordeaux and of the Rhine.

While, however, we vindicate, for the light natural wines, the position of the best common alcoholic drink for healthy adults, we have some remarks to make on certain more limited and occasional uses of wines, which embody ideas not commonly received by the profession. We refer to the employment of the stronger wines, such as port, sherry, madeira, or marsala, all of which are fortified by the addition of alcohol over and above that produced by their own fermentation.

It is a common idea that the stronger wines are particularly suited to healthy adult life, and especially to middle age; but we believe that this is a complete mistake. The vigorous frame and perfect digestion of a healthy young or middle-aged person requires but a moderate daily allowance of alcohol to assist functional activity; and as, nevertheless, the temptation to free indulgence in the pleasures of the table is most influential in the middle period of life, it is of the greatest consequence that the alcohol should be taken in the most diluted forms: and we may add that this is especially necessary for persons (particularly women) who possess a nervous temperament, and are, therefore, highly sensitive to strong and pleasing impressions on the nervous system. It is otherwise with the two extremes of life—infancy and old age; in both these periods there are tendencies to a variety of afflictions which scarcely appear to deserve the name of positive disease, but which demand serious modifications of

the diet; these conditions may, we affirm, be far more advantageously treated by the administration of the *stronger wines* than by any other means whatever. We shall defer the full consideration of this subject till we come to speak of the ethereal constituents of wine, which count for at least an equal, if not a greater, value than that of the alcohol in this particular use of the stronger wines, more especially of sherry.

2. Sugar is the next ingredient of wines which we have to consider in the selection of appropriate beverages for persons in ordinary health; and here we get a forcible illustration of the maxim laid down in a former paper, that "health" is not a constant and uniform thing, capable of being separated by a sharp line from "disease;" for there are the greatest possible differences between the respective capabilities of different persons, equally healthy in appearance, to digest saccharine wines.

The respective proportions in which the various classes of wines contain sugar cannot, of course, be stated in a summary manner, sugar being precisely the most varying element. Given a wine made from a certain grape, and under certain climatic conditions, then, of course, the amount of sugar which it actually contains when drunk will depend, (1) on the degree of completeness to which fermentation was allowed to proceed in the wine-making; and (2) on the age of the wine. Taking the matter broadly, it may be said that the natural wines are the non-saccharine, and the fortified wines are the saccharine; though there are important exceptions to this which must be specially mentioned. Here are the results of Dr. Dupré's analyses of four clarets (red Bordeaux), of the respective prices of 12s., 15s., 30s., and 66s. per doz.: the first contained 13·56 grains of sugar in the bottle, the second 51·62 grains, the third 18·48 grains, and the fourth (an old bottled wine) 11·40 grains. Contrast with this the same chemist's analyses of four sherries prices respectively 22s., 36s., "high" and "high," the two last being wines of good vintage, and some years in bottle: the quantities of sugar are, 307·8 grains, 217·2 grains, 356·4 grains, and 421·2 grains per bottle, respectively. Take also the analyses of four ports (vintages 1864, 1851, 1851, and 1842): the quantities of sugar per bottle are 519·72 grains, 460·80 grains, 190·20 grains, and 121·20 grains. Two samples of marsala (old and good) con-

tained 388·8 and 451·2 grains of sugar per bottle, respectively. The natural wines of the Rhine, on the other hand, contain even less sugar than clarets: thus, in four samples examined by Dr. Dupré (prices 15s., 20s., 36s., and 72s. per doz.), the sugar per bottle amounted to 1·44 grains and 8·64 grains, respectively, in the two cheapest, and to a mere "trace" in the two others. Champagne stands in a peculiar position, as it is intentionally sweetened: according to Bence Jones' analysis there are about 500 grains of sugar per bottle in such varieties as find most favour in this country (*c. g.* Moët and Chandon, *premier qualite*); but some champagnes are sweetened to a much higher pitch, while, on the contrary, some English connoisseurs demand a champagne which scarcely contains half this amount of sugar. Hungarian natural wines contain but a small amount of sugar; they stand somewhat intermediate, as regards this element, between Rhine wines and red Bordeaux.

One of the richest in sugar of all the natural wines is Bordeaux-Sauterne, a white wine of great popularity, from its fragrant bouquet and flavour. Bence Jones' analysis of a sample of a fine Sauterne (72s. per doz.) gives 125 grains of sugar to the bottle; and the taste of this wine, until it has been many years in bottle, is distinctly sweet, too much so, indeed, for the taste of many wine-drinkers. On the other hand, among the fortified wines we occasionally meet with sherries of extreme "dryness," containing, in fact, almost no sugar at all: such, for instance, as an *amontillado* (marked "very good" in Bence Jones' tables). But such wines, *when genuine*, are too expensive for common use.

The above brief summary of the proportion of sugar in the principal varieties of wine will be sufficient for the purposes of those who merely require some guidance in the choice of an every-day beverage. It is clear that for those who wish to employ wine as a beverage, and to avoid the use of a highly saccharine liquor, the safest choice, in this respect, lies between the sound ordinary wines of Bordeaux, the Rhine, and Hungary. It now remains for us to inquire what are the facts as to the wholesomeness or unwholesomeness of saccharine wines, as such, to persons in ordinary health.

It must be remembered, in the first place, that we are not

dealing with the possible effects of *very large* quantities of sugar in wine. The "dietetic use of wines" does not practically include the employment of any wine which would contain more than one ounce to the bottle, and the facts already detailed as to alcoholic strength will show that the wines (except champagne) that contain anything like this percentage of sugar—port, sherry, madeira, marsala—cannot (on the ground of alcoholic strength) be safely taken in larger daily quantities than one-third to one-half of a bottle. The question then arises, whether—and if so in what circumstances—the ingestion of from one-third to half an ounce of sugar in their wine has a deleterious influence upon persons in what would ordinarily be called "health."

There are three classes of individuals enjoying fairly good general health respecting whom there is a certain amount of evidence that saccharine wines are apt to unfavourably influence their bodily condition. (1.) A considerable number of persons possess a marked proclivity to excessive deposit of *fat* in the cellular tissues; and a good deal of evidence has been adduced by various writers—from Brillat-Savarin to Banting—to show that the saccharine and sugar-making ingredients of food aggravate this tendency. It is not necessary, however, to dwell on this subject, as the amount of sugar introduced into the body by anything like a temperate consumption of saccharine wines would obviously be trifling as compared with the supplies furnished by ordinary food. (2.) The tendency to *gouty* affections, which is hereditary, is widely diffused among persons otherwise healthy, and a certain amount of evidence exists to show that a considerable saccharine ingredient perceptibly increases the well-known tendency of alcoholic drinks to evoke the tendency to gout, which is latent in such constitutions. Our own investigations lead us to entire concurrence with the opinion of Garrod—the greatest living authority on gout—that the saccharine element of alcoholic liquors has never yet been proved to be the *only* effective element in provoking the disease. Nevertheless, the fact that the one common feature in all those classes of drinks which really do seem convicted of a strong gout-producing tendency—malt liquors, strong wines, champagnes, and sweet cider—is their saccharine or sugar-producing quality, does suggest an almost necessary connection between saccharine beverages and

gout. Even if it be true, as Dr. Garrod maintains, that even the "driest" sherry will often appear to excite gout in a predisposed individual, we cannot believe that the saccharine element of wines has not a powerful influence in developing gouty manifestations. In truth, however, we question the accuracy of this assertion; at least we greatly doubt whether really non-saccharine sherry ever produced a *first attack* of gout; but when the tendency to the attacks has become very strong, a trifling disturbance of digestion might be sufficient to bring on a fit of gout, and even so innocent a fluid as dry sherry might suffice for this purpose. Still, there can be no question that for persons who are born of gouty families, especially if they have themselves experienced warnings of gout, the safest course is to avoid the whole class of fortified wines, and confine themselves to sound light claret, or, in the rare cases where this disagrees, to very weak cold spirits and water, carefully bearing in mind that though, when used in moderation, alcohol itself does not appear to be a gout-producer, yet the depression of the nervous system which inevitably follows excesses, even with plain gin, is perfectly competent to induce gout in predisposed persons. (3.) Even more than to those persons who are liable to well-pronounced gout, saccharine wines are a danger for that class of dyspeptic patients who are the victims of a latent gouty disposition. In subjects of this temperament the effects of even a small indulgence in this kind of liquor are often extremely disastrous. We are acquainted with one lady whose sensitiveness in this regard makes her stomach an extraordinary delicate tester of the sweetness of wines. The least approach to high saccharine quality makes wine, to her, a poison which infallibly provokes severe vomiting or bilious diarrhœa, or both. It is a curious circumstance, however, that this particular lady only showed the tendency in question rather late in life, previously to which period she had habitually, though very moderately, taken port wine of a decidedly saccharine type; and it was soon after her first development of an incapacity to bear this wine that her first (very slight) symptoms of articular gout appeared. The same lady drinks very dry sherry with perfect impunity.

The peculiar form of dyspepsia which is found in persons of gouty habit is, however, by no means the only dyspepsia

with which the saccharine wines disagree. It is one of the commonest medical observations that a considerable number of persons can only maintain a good and active state of the digestive powers by means of a very strict limitation of their allowance of sugar, and also of the starch-containing foods, which undergo conversion into sugar at an early stage of the digestion. Such persons are obliged to be extremely moderate, for instance, in their consumption, not merely of pastry and sweets, but even of bread and potatoes, under penalty of severe dyspepsia if they transgress this rule. To such individuals the saccharine wines are commonly very unsuitable and disturbing. For some reason, not clearly apparent, in the present state of our knowledge of the chemistry of digestion, the tendency of sugar to "turn acid" on the stomach is very much heightened when that substance is given in combination with alcohol. This is the case even when it is taken with a plain spirit like gin. But the mischief is still further heightened in the case of wines, since all wines contain a considerable proportion both of fixed and volatile acids, as will be presently seen. The tendency of the sugary wines to produce sour dyspepsia is, however, altogether out of proportion to their chemical degree of acidity. For instance, such a wine as one of the ports analysed by Dr. Dupré (vintage 1864), which contain 43·31 grains per 1,000 of sugar, and only 4·13 per 1,000 of total free acids, is far more likely to be mischievous in this direction than a light natural wine like claret of good quality, which may contain as much as six grains of free acid per 1,000.

3. The natural *acidity* of wines is the next item which needs consideration in reference to their use as beverages; a more general diffusion of accurate knowledge on this subject is highly desirable, since the taste of wines, by which people ordinarily judge of their acidity, is often highly misleading. The following are the figures given by Dr. Dupré for the principal wines:—In four red Bordeaux (prices 12s., 15s., 30s., and 66s. per doz.) the total quantities of free acid were 77·40 grs., 72·96 grs., 74·28 grs., and 65·76 grs. per bottle respectively. In four samples of hock (prices 15s., 20s., 36s., and 72s. per doz.) the total free acids were, 67·44 grs., 57·60 grs., 70·32 grs., and 69·24 grs. per bottle. In three samples of Hungarian wine (prices 21s., 34s., and 42s. per doz.) the total free acids were, 80·16 grs., 85·92 grs., and 83·88 grs.

per bottle. In four sherries (prices 22s., 36s., "high" and "high") the total free acids were, 55·32 grs., 54·48 grs., 61·16 grs., and 58·08 grs. per bottle. In four ports (prices 32s., 50s., "high" and "high") the total free acids were, 49·56 grs., 49·56 grs., 62·16 grs., and 58·08 grs. per bottle. In two marsalas ("old" and "very old") the total free acids were 39·12 grs., and 47·76 grs. per bottle.

When we analyse further the free acid constituents of wine, we find that they are made up of three principal ingredients—malic, tartaric, and acetic acids, and a small proportion of several volatile acids closely akin to the latter, which, however, have but a trifling influence on the acidity of wines, though they are important ingredients in flavour and bouquet.

Of the three principal acids, malic and tartaric are the direct product of the grape-juice, the former preponderating: they are fixed, or non-volatile. The acetic, and other volatile acids, are the consequence of fermentation, and of the slower oxidizing processes which go on after fermentation. Supposing the total amount of free acids to range (as it does in sound wines) between 4 and 6 per 1,000, the volatile acids should not exceed one-fourth of this amount in the case of white, or one-third in that of red wines. More than this indicates that the wine is losing its vinous character and turning to vinegar.

Now as regards the acidity of wines, it need hardly be said here that a very popular prejudice in this country regards the light natural wines as essentially sour, and consequently, in that respect at least, inferior in wholesomeness to the port and sherry which are consecrated by English drinking traditions. Of course if we judge by mere taste this idea is correct; a light claret, or still more a light hock, will appear strikingly sour as compared with a sherry of fair soundness: one would judge that there was five or six times as much free acid in the light wine as there is in the stronger. In truth, however, if we turn to the analyses of Dr. Dupré, we find that a light claret of 1865, costing only 15s. a dozen, contains but 6·08 per thousand of total free acids, as against 5·18 per thousand in an expensive old bottled sherry of 1860 vintage; and that the proportion of acetic to total free acid is much greater in the case of the sherry than of the claret. There is, perhaps, even a more settled prejudice against hock than

against claret on the score of supposed acidity; yet if we turn again to the tables we find hock at 15s. per dozen, containing no more than 5.62 per thousand of free acids, of which, again, a less proportion than in the case of the sherry above mentioned is volatile acid. The explanation of the common mistake is, of course, to be found in the large quantity of sugar (29.70 per 1,000) which the sherry contains, and which *masks* the acid; and it therefore becomes an important question, whether the mere masking of an acid taste in this way really renders the wine more digestible.

For our own part we are totally opposed to such a view, and indeed are strongly inclined to believe that, as applied to wines, it is actually the reverse of the truth. We believe that in reality the maximum of injurious quality is reached when a wine of tolerably high natural acidity contains also a considerable amount of sugar. For (1) the dyspepsia, gout, and other symptoms which (putting aside *alcoholism*) are supposed to be the *special* results of indulgence in wine, are comparatively uncommon among the European nations, who habitually consume the natural acid-tasting light wines in large quantities. (2) We have personally sought in vain for any instance where the moderate use of a really non-saccharine sherry has produced gout; and we strongly suspect that those persons who have fancied that gout was provoked in them by the use of a "dry" sherry were merely judging of the quality of the liquor from its taste, and had really been drinking a sherry the composition of which resembled that mentioned above. (3) Whatever may be ultimately shown to be the true origin of the gouty and other allied forms of dyspepsia, it can scarcely be doubted that one of their most important phenomena is an interference with the normally rapid rate of absorption of saccharine matters from the stomach, or that the presence of alcohol (especially alcohol of some strength) would increase this delay of the sugar-absorption. That under these circumstances fermentative changes, with abnormal formation of acid and irritant matters, would occur in the stomach, seems highly probable. (4) It is very difficult to believe that the trifling proportion of fixed and volatile acids present in any drinkable wine, would be sufficient to disturb digestion save in persons of exceptional sensitiveness; one has

only to remember the quantities of malic and tartaric acid which every one swallows during the fruit season, and the quantities of acetic acid which even the most modest consumer of pickles, sauces, and salads habitually takes, to perceive how extremely improbable it is that a wine containing not more than 6 per 1,000 total free acids should (from *that* cause) disturb the digestion of any moderate drinker of it.

It is needless to say that throughout the above remarks we are dealing with the case of wines which are fair specimens of their respective classes, and not with those which, whether from careless manufacture, or fraudulent manipulation, depart widely from the standard of sound wines. The latter is a subject to which we shall devote a separate paper when we have completed our survey of the principal normal ingredients of wines, and their several relations to the diet of ordinary life.

(To be continued.)

[Important papers by Professor Binz, Dr. Sturges, and Mr. Robert Hamilton are unavoidably postponed.—ED. PRACTITIONER.]

Reviews.

Dr. Tanner on the Diseases of Infancy and Childhood. Second Edition, revised and enlarged. By ALFRED MEADOWS, M.D. Lond., M.R.C.P., &c.

THIS much enlarged and improved edition of Dr. Tanner's useful manual of children's diseases will be very acceptable to the profession. So long a time has elapsed since the publication of its predecessor, that Dr. Meadows has had no less a task to perform than the complete recasting of the work. A signal example of the great progress which our knowledge of infantile diseases has made, and of the corresponding necessity for remodelling treatises which are but a few years old, is afforded by the chapter in which Dr. Meadows has dealt with the subject of rickets: this is altogether an addition, if our memory serves us right; and it is a sufficiently startling reminder of how recent is all that accurate knowledge of the realistic diathesis which the labours of Sir W. Jenner, M. Guérin, and others have now secured to the profession.

The subject of rickets is, however, only one branch of the great question of diathetic affections, which it is fair to say that Dr. Meadows has for several years treated, in his previous writings, from a point of view which is exceedingly important in regard to those practical questions of treatment with which the readers of this journal are chiefly concerned. The following will show the general tendency of his opinion:—"It is probably not an exaggeration to say that nine-tenths of the children we are called upon to treat, exhibit, in some form or other, unmistakable evidence of diathetic taint, and it is, moreover, certain that these diatheses give a character to all other diseases, influencing their pathological tendencies, controlling and modifying the symptoms, requiring much vigilant watching, and necessitating distinct recognition in their management and treatment." The corollary to this is, that the physician who treats children should be, in a far greater number of cases than is generally understood, really concerned very little with the external form that is taken by intercurrent disease, and very much with the intrinsic strength and condition of the organism; and that it is especially important for him to neglect acute *symptoms*, if necessary, in order

that he may not for a moment neglect the duty of supporting the general strength.

Now, whether we approve or disapprove of the exact terms in which Dr. Meadows formulates this opinion, it represents, in our judgment, an important and central fact in pædiatria. We object to, or at least we hesitate about the use of, the word "diathesis;" having, we confess, very probably no better reason for so doing, than the prejudice raised against the word by the preposterous abuse of it of which French writers (especially dermatologists) have been guilty. But at any rate we cannot for a moment doubt that in the treatment of children's acute diseases the overwhelmingly important consideration, both with reference to present recovery and the avoidance of disastrous sequelæ, is *nutrition*; and that there are reasons for this which are altogether peculiar to the case of children. We may explain what we mean by quoting the words of one of the most acute and experienced of living physicians, who was conversing with us recently on the future of pædiatria. "The fact," said he, "which men ought constantly to keep before their eyes in treating children's diseases, but which in practice they constantly ignore, is that the very organs which are the subject of momentary changes which attract the attention of friends, and cause the physician to be summoned, are at the very same time in process of *growth and development*." And Dr. Meadows is, we believe, unquestionably right when he points out, that acute disease falling upon the young and growing organs, even if it does not find an unhappy hereditary predisposition to structural degeneration, does very often so far spoil the organ as to make it incapable, afterwards, of carrying the double work of *growth in size and perfection of tissue repair*. And whatever may be the plausibility of some of the objections which have been urged to the practice of universal feeding in the acute diseases of adults, we maintain that these objections cannot possibly be maintained in the case of children; and we entirely concur in the feelings of surprise and almost indignation with which it is evident that Dr. Meadows regards those authors who think it a trivial thing to omit nutritive support, and to inflict depressing remedies, in the phlegmasiæ and fevers of childhood.

We have no space for reviewing this work at length, nor is it necessary. It is of a thoroughly practical character; and to the medical man engaged in active practice among all classes of patients, it will be found very useful. One of the special features which entitle it to praise on this ground is the copious list of formulas. Dr. Tanner's books have always been distinguished by attention to this matter; but in the present case Dr. Meadows has very much extended and enriched the collection: we may especially mention the care and accuracy with which he

has drawn out prescriptions of the proper doses of narcotics at various ages, a point in which there is an extraordinary and unaccountable carelessness of statement in the majority of practical works. We wish this volume success, which it merits not only by the intrinsic excellence of its contents, but by its elegant and readable style of printing, and its not too excessive bulk.

[A great number of reviews are postponed from lack of space.
—ED. PRACTITIONER.]

Clinic of the Month.

Treatment of Psoriasis by Carbolic Acid.—Dr. McNab recommends this mode of treatment, stating that he began by applying it in a case of inveterate psoriasis that had resisted all the ordinary plans of treatment, and found that after continuing the treatment for some time the scales began to fall off, the process of desquamation was retarded, and the skin began to assume a healthier aspect. At this stage of the process the carbolic acid application was discontinued, and the oxide of zinc ointment substituted for a short time, which was followed by the cure of the disease. He considers the best mode of application of the acid to be in the form of ointment, which should consist of one part by weight of the acid to four of common lard, melted down and mixed, and afterwards allowed to cool. It ought to be applied every night at bedtime, with gutta-percha tissue covering to prevent evaporation, and this should be continued until the scales disappear and the skin begins to assume a smoother and healthier aspect. The oxide of zinc ointment is now to be substituted until the cure is effected. The utility of applying the oxide of zinc afterwards depends solely on its astringent effects, and keeping the parts moist, and excluding the atmospheric air. The local should of course be combined with appropriate general treatment. (See *Lancet*, March 19, 1870.)

Treatment of perforating Ulcer of the Stomach and Hæmatemesis.—In a clinical lecture on these subjects Dr. George Johnson remarks that in the treatment of hæmorrhage absolute rest in bed is essential; no food should be introduced into the stomach, but the patient should be sustained by nutritive enemata. The bleeding patient should lie still, sip iced water, and be fed by the rectum. The most useful styptics in these cases are tannic acid in ten-grain doses, tincture of perchloride of iron in twenty-minim doses, or oil of turpentine in twenty-minim doses. When the bleeding has ceased liquid food may gradually and cautiously be given by the stomach; then solids; and, lastly, iron is a most valuable restorative tonic. In the treatment of perforation of the stomach the necessity for keeping the stomach free not only from food, but from medicine, is absolute. This accident is generally fatal, but there are on

record a few cases in which a patient has recovered after symptoms of perforation had occurred, and Dr. Johnson adds one to the number. (See *British Medical Journal*, March 26, 1870.)

Treatment of Otitis media purulenta.—Dr. v. Millingen observes that this is one of the most painful and obstinate diseases of the ear, and is alike uncertain in prognosis and difficult to cure. The object to be attained is the healing of the diseased mucous membrane. Forcing air into the tympanum through a catheter is by no means sufficient to remove a mass of thick secretion accumulated in and adherent to the sides of the tympanic cavity. Syringing the external meatus does very little good, as only the pus lying in the external meatus is removed; or if there be a perforation in the tympanic membrane, only a small quantity of that which is contained in the tympanic cavity. The Eustachian tube, generally the starting-point of the disease, is also affected. If the mouth of the tube be examined, it will be found to be in most cases inflamed, if not ulcerated, and it is to be inferred that the whole mucous membrane of the ear, beginning from the membrana tympani to the mouth of the Eustachian, is covered with purulent secretion. The idea suggested itself to Dr. Millingen to try a new mode of treatment which has been adopted in the clinique of Dr. Pollitzer, of Vienna, with the most favourable results. It consists in catheterizing the patient, and after having insured the passage of air into the tympanic cavity, by means of the otoscope, to syringe tepid water several times successively through the tube into the cavity with sufficient force to bring out all the pus that may be there contained; the second step is to blow in air again, in order to drive away any water which may have remained in the tympanum; and, lastly, whenever the case requires it, to blow in through the same catheter a few drops of some astringent solution. (See *Medical Times and Gazette*, March 26, 1870.)

Chloral in Insanity.—Dr. Tuke states that, being desirous of ascertaining what influence the hydrate of chloral might have in the treatment of insanity, he instituted a limited series of experiments on certain patients recently admitted into the Fife and Kinross District Lunatic Asylum, and also on some old-standing chronic cases. These were successively a case of chronic alcoholism, characterized by acute mania; two cases of asthenic insanity, symptomized by melancholy; and lastly, a case of climacteric insanity, characterized by melancholy. The advantages of the drug over all other hypnotics he considers to be that it is more uniform in its action; that it has no depressing influence; that it does not cause constipation; that it does not produce nausea, and that its effects are more lasting. (See *Lancet*, March 26, 1870.)

Quinovate of Lime.—Messrs. Hodgkinson and Co., of Tenter Street, E.C., have prepared this salt from Peruvian bark. The new salt is said to possess valuable tonic properties, and to have been used by several German physicians with marked success. The dose is from two to eight grains frequently administered in the form of powder, or in a mixture. (See *British Medical Journal*, March 26, 1870.)

Operations for Removal of Epithelial Cancer of the Tongue.—Three cases are recorded in the *Lancet* of this operation. In one of these, operated on by Sir William Fergusson, the organ was seized with toothed forceps, drawn well forward, and removed with one sweep of the knife; profuse arterial hæmorrhage followed the operation, most of which quickly ceased, only one vessel requiring ligature. In the second Mr. Hilton first isolated the tumour by passing three needles under its base through the healthy tissue. Beneath these pins was fixed a loop of platinum wire in connection with an *écraseur*; junction was next made between the loop of wire and a powerful galvanic battery, and by screwing the *écraseur* the growth was removed from the tongue. In the third case, by Mr. Erichsen, a T-shaped incision was made under the chin, the first cut being made from the lower edge of the jaw, along the mesial line, to the hyoid bone, and the incisions on either side along the inferior margin of the lower maxillary bone. Two flaps formed of skin and subjacent muscular tissue were dissected out and turned back, and the insertions of the hyoid and lingual muscles to the lower jaw divided, the tongue dragged forwards through the large submental opening, and removed with the *écraseur*. From the clinical remarks made on these cases it would appear that an immediate and rapid removal of the disease is to be preferred to the application of the ligature, which is a tedious and by no means safe proceeding. It is noticeable also that the general opinion respecting the *écraseur* is, even when slowly and cautiously used, that it cannot be relied upon as a preventive of profuse hæmorrhage. (See *Lancet*, April 9, 1870.)

Treatment of Epispadias.—In a clinical lecture on this subject Professor Billroth, after describing the various forms of the deformity, remarks that it is accompanied by constant dribbling of the urine, and that it renders cohabitation impossible, or at all events ineffective. He then asks,—Is it possible to cover the slit bladder with a pad? but acknowledges that it is almost impossible to construct one which shall be efficacious when the patient is moving. More, however, he thinks, can be done by operation, though it can never cure the incontinence. Nearly all cases operated on in former times were unsatisfactory

in their results, probably because the operators endeavoured to gain too much at once. In a remarkably successful case treated by Thiersch, with untiring patience, the urethra was first closed at the glans, then for the closure of the remaining portion two long rectangular flaps of the lateral surface of the penis were made in such a manner as to effect a bridging over of the urethra, small apertures which remained above and below the bridge being cured by subsequent operations. After undergoing treatment for eighteen months the patient possessed a nearly normal penis and prepuce, capable of micturition in a jet, and of performing the coitus in a perfect manner. Professor Billroth enters an earnest protest against performing the operation for any of the slighter cases, and adduces a case where a trifling operation produced suppuration of both corpora cavernosa, frightful pyæmia, metastatic sloughing of both choroids, and disease of nearly all the joints. In another case the application of the actual cautery to close a minute opening led to a fatal result. (See *Medical Times and Gazette*, March 12, 1870.)

Nitrous Acid as an Anæsthetic, with Coxeter's Liquid Gas.—Mr. Fox strongly advocates the further employment of this gas in operative surgery on the following grounds:—1. Its safety; 2. The rapidity with which anæsthesia can be induced, viz. in from 50 to 100 seconds; 3. The readiness with which a patient can either be kept for a prolonged period in the anæsthetic state, or if desired can be promptly and thoroughly awakened; 4. Because it is actually pleasant to the patient to inhale, and consequently much fright and mental distress is avoided, diminishing the danger of death by syncope; 5. Because the recovery is usually bright, pleasant, and complete, any after discomfort being extremely rare; 6. Because sickness has never in his experience occurred during the administration of the anæsthetic, and but *rarely* afterwards. Mr. Fox states he has employed it in over 1,500 cases, and that Blondin on two occasions performed all his most difficult feats on the high rope 400 feet long within three hours after the gas had been administered to him by Mr. Fox for some extremely severe dental operations. (See *Lancet*, April 2, 1870.)

On the Use of the Calomel Vapour Bath.—Dr. Lamprey gives the details of a case of keratitis and sclero-choroiditis, which after extraction of bad teeth rapidly improved under the employment of ten and subsequently of twenty grains of calomel as a vapour bath, used twice a week, with five grains of bromide of potassium three times a day, and an alterative pill of podophyllin, ipecacuanha, and extract of gentian at bedtime. Another case in which a cure was effected by the calomel bath was one of lupus exedens, probably with a syphilitic com-

plication. The apparatus he recommends is exceedingly simple, consisting of only a good spirit lamp and a tin patty-dish, which is filled with an ounce and a half of water, with which the calomel is mingled. The latter is set upon a small tripod over the lamp, under the chair on which the patient is sitting, well invested with blankets; the water evaporates first, and then the calomel. Exposure for half an hour to the vapour is sufficient. (See *Medical Times and Gazette*, March 19, 1870.)

Uses of Buttermilk in rearing Infants.—Dr. Ballot, of Rotterdam, observes that this plan is now largely pursued in that city, and is commonly practised in the country. He points out the variations that exist in ordinary cows' milk, and condemns the plan of feeding cows on the grain which is the refuse of distilleries.

Treatment of Syphilis.—Dr. Farquharson, of Rugby, states that, having begun army practice with a horror of mercury derived from the teachings of the anti-mercurial school, he was gradually forced to have recourse to it from the comparative failure of his results. The worst cases of syphilis in his experience had been those in which either very little mercury had been given or none at all. Mercury, however, should be used with certain precautions, first amongst which is good food, as calomel vapour baths produced salivation in patients kept accidentally on low diet. He is of opinion that it should be given early in the disease, and is inclined on the whole to prefer its internal use. Chlorate of potash after fair trial, he thinks, has no influence on syphilis. (See *British Medical Journal*, March 12, 1870.)

Addison's Disease.—Dr. Gordon gave the following summary of the principal facts known in respect to Addison's disease, at a meeting of the Army Medico-Chirurgical Society, held at Portsmouth, *à-propos* of a case reported by Dr. Wales. 1. It is a matter of doubt whether "Addison's disease" may not at times be hereditary. 2. It is equally so whether, under certain conditions, it may not be connected with syphilitic cachexia. 3. It has no necessary connection with pulmonary tubercle. 4. Nor with albuminuria. 5. The presence of the characteristic disease of the supra-renal capsule is not necessarily attended by regional pain. 6. In only one of the cases described did medical treatment appear to retard the disease. 7. The symptoms of the disease are, for the most part, peculiar and characteristic. 8. Bronzing of the skin may occur where "tubercular" matter is not after death found in the supra-renal capsules. 9. It may be matter of doubt whether in some cases the bronzing of the skin described as Addison's disease, may not really be the discolora-

tion which attends secondary syphilis. 10. The exact relationship between bronzing of the skin and supra-renal disease are still open questions. 11. There is some reason to believe that Dr. Addison himself was aware that the connection between the two conditions was not invariably found to exist. 12. The most frequent morbid appearance in the supra-renal capsules, when disease of those organs is discovered, in cases of bronzing is "tubercular" deposit. 13. It is possible that, as suggested by Dr. Watson, bronzing only occurs when disease of the supra-renal capsules is far advanced, or where both these organs are much disorganized. 14. So far as observations have yet gone no connection has been traced between bronzed skin and disease of any other of the ductless glands. 15. And finally, it seems reasonable to believe that the true nature and associations of this affection, known as Addison's disease, have yet to be established. (See *Medical Times and Gazette*, March 12, 1870.)

Treatment of Nævi by the introduction of Red-hot Needles.—Mr. Croly communicated to the Surgical Society of Ireland a remarkable case of nævi occurring in a very young child. In connection with the face and head there were four distinct vascular tumours. One was situated on the lower lip, a second in the right parotid region, a third on the back of the neck, and a fourth on the tongue. The first-mentioned was treated by plunging red-hot needles through its substance. This method of treatment answered admirably, and was followed, curiously enough, by the spontaneous cure of tumours two and three. Mr. Croly was inclined to attribute this happy and unlooked-for result to the influence of the operation on the sympathetic nerve-supply of the nævi. (See *British Medical Journal*, April 2, 1870.)

On the Cure of Chronic Gonorrhœa, Gleet, and Leucorrhœa by the application of Ice.—Dr. Gustav Abrath, of Sunderland, ventures to introduce to the profession the efficacy of ice in the above-named affections. He gives a number of cases in which successful results were obtained after a great variety of treatment had been adopted. In all cases, he observes, the general health of the patient should be carefully inquired into, and the presence of any complication ascertained, and then a suitable general treatment should be combined with the local. In his first case, which will illustrate his mode of proceeding, Capt. M——, a German, aged 36, had, under the advice of various surgeons in Berlin, Paris, and London, employed injections, blisters, medicinal treatment, and the treatment adopted during a sojourn of six weeks in a hydropathic establishment. Dr. Abrath, in the first instance, ordered sulphate of quinine and

sulphate of iron, and told him to apply cold water to the parts. But thinking afterwards that the application of intense cold internally to the surface of the urethra might be more beneficial, he took advantage of a severe frost to procure some fine icicles, made artificially by allowing water to filter slowly through linen. These were introduced into the urethra in the manner of a bougie, and allowed to remain till they were dissolved. This was done night and morning, and in ten days the patient was well. Before applying the icicles the bladder should be evacuated, and the urethra washed out with a little cold water, and about six icicles should be introduced in succession, night and morning. The treatment of leucorrhœa he conducts on a similar principle. (See *Medical Times and Gazette*, April 9, 1870.)

Bromide of Potassium in Mammary Tumours.—Dr. Osborn adopted this remedy in the case of a woman aged 39, and mother of five children. In March 1869, four months after weaning a child, she began to feel acute darting pain in the left breast, with some swelling. In August she had a sudden discharge of a teacupful of florid blood from the nipple. On examination the nipple was found to be retracted, but this was stated to have always existed. There was a small cicatrix a little above the nipple through which the hæmorrhage had taken place, and which presented a small orifice, from which a little ichorous discharge exuded. A hard, tuberculated, and firmly attached tumour of considerable size occupied the breast, and was accompanied by acute pain. A lotion of vinegar and water was ordered, and she was directed to take a mixture of bromide and iodide of potassium, which relieved the pain; but as she complained of debility, the mixture was suspended, and quinine given instead. Under this plan the pain returned, and Dr. Osborn determined to try the bromide externally by adding it to the vinegar lotion, which had caused a slight eruption on the skin, and thus facilitated the absorption of the salt. Two drachms of bromide of potassium were mixed with six ounces of vinegar, and ordered to be applied twice a day by saturating a piece of flannel with the lotion, and covering it with oiled silk. After pursuing this plan for six weeks the tumour was found to have become considerably reduced in size, whilst the patient remained free from pain, and soon returned to her usual household duties. He refers to several other cases in which considerable improvement followed the employment of the same remedy. (*Ibid.* April 16, 1870.)

Extracts from British and Foreign Journals.

Turpentine in Traumatic Erysipelas.—Dr. Gustav Borigen, of Königsberg, communicates the details of two successful cases of traumatic erysipelas in which this remedy was employed. The first was that of a child a year and a half old, who one evening had a violent shivering fit, followed by redness, swelling, and pain in the right leg and incapacity of moving it. Pain in the head, thirst, and loss of appetite were complained of; the bowels were confined. The child had been suffering from eczema of the right ear, and had scratched off the scabs. A few days before the above symptoms appeared the whole of the right side of the face was affected with erysipelas. Moreover some eczematous pustules had formed on the knee of the affected side a few days previously, and had from neglect become ulcerated; and from this point the erysipelatous symptoms had extended over the limb. He was ordered small doses of calomel, to be taken every two hours, and the erysipelatous parts to be brushed over with oil of almonds and covered with wool. The next day the child was better, and he was now ordered to have the surface of the leg painted with ol. terebinthinæ. This produced pallor of the erysipelatous surface, and the swelling diminished; after the second application of the remedy, the power of movement of the limb returned, and in a few days the child was well. The second case was one of erysipelas of the foot, in a man of 36 years of age, from slight injury to the little toe. Here, also, the application of the turpentine speedily caused pallor of the skin, and after two or three days, the remedy being employed twice in the twenty-four hours, a small abscess only remained on the little toe, which required to be opened, the man making a good recovery without further inconvenience. (*Berliner Klinische Wochenschrift*, Feb. 14, 1870.)

Lime-water in Bright's Disease and Anasarca.—Kuchenmeister recommends the employment of lime-water in Bright's disease on the ground of its power of dissolving proteine. He has administered it also with the object of dissolving the proteiniform infiltrations of the kidneys in scarlet fever. He gives one or two teaspoonfuls of lime-water in milk every three hours. Under its influence the quantity of urine augments to many

times its original amount. Slight hæmorrhages occasionally require that it should be stopped, but the quantity of albumen diminishes, whilst the number of fibrinous and epithelial cylinders in the urine seems to increase. The success of lime-water treatment is remarkable in anasarca, but less brilliant in dropsy of the serous cavities. (*La Rev. Médicale*, Feb. 26, 1870.)

Therapeutic Uses of Iodoform.—Dr. Stiles Kennedy, of Newark, Delaware, communicates the results of his observations on the effects of this drug, which he considers to possess great value in various constitutional and nervous diseases. He gives the details of a case of periodic gastric neuralgia, probably connected with a rheumatic diathesis of several months' standing, in a man not 30 years of age, of antecedent good health and vigour. The pains in his stomach recurred on each afternoon, and lasted well during the remainder of the twenty-four hours. Quinine, iron, morphia, arsenic, blisters, mercury, and other remedies, had been administered without advantage. Two grains of iodoform, and the same quantity of pulv. ferri, were prescribed in pills three times a day, and in a week he was well. The second case was that of a man aged 45, who suffered from violent and frequently recurring pain in the scalp, running from the eyebrows to the occiput. A great variety of treatment had here also been adopted, the last being heroic doses of quina, morphia, iron, and arsenic in combination, but without effect. Dr. Kennedy therefore ordered iodoform, pulv. ferri, of each one hundred grains, veratria one grain; to be divided into fifty pills, one to be taken three times a day. After twelve days' continuance the pain completely disappeared, and in the course of the past year only recurred twice, on each occasion being quickly removed by recommencing the use of the pills. A similar combination, without the veratria, was found very effective in sciatica, by another physician, and in several cases of ague by a third. Dr. Kennedy recommends it strongly as an addition to the ordinary plasters and ointments for syphilitic periostitis, &c.; in fact, he says, an ointment containing from thirty to sixty grains of iodoform to an ounce of lard is one of the most delightful remedies, so far as relief is concerned, to painful burns, sores, chancres, boils, &c., that can be found, promoting rapid healing. In two cases of chancre the dry powder was applied with magical results. (*The Medical and Surgical Reporter*, vol. xxii. 1870, No. 3.)

Hydropathic Treatment of Typhus.—Dr. Stieler has written an important paper on this subject, recording the deaths of ten cases of typhus under the cold-water plan of treatment. He remarks that as this method has been very extensively employed in Germany, and has obtained a footing in most of the large hospitals, whilst its advantages have been admitted by

most observers, it is only right that fatal cases should be carefully investigated, in order if possible to ascertain the circumstances which may render it inappropriate. It appears that from the 1st of October, 1868, to the 1st of June, 1869, a hundred and twenty-six cases of typhus were treated with cold water, of whom ten died, or 7·9 per cent., whilst the mortality previous to the adoption of the plan was 12 to 15 per cent. The mode of using the cold water consisted in placing the patient in a half (or slipper?) bath at a temperature of from 50° to 60° F., for a period varying from a quarter to half an hour. As soon as the temperature of the axilla stood at 103° F., he was placed in the bath, the water of which was agitated around and thrown over him. If the temperature of the axilla was as high as 104°, he was douched while in the bath with a little ice-cold water. In the intermediate period the patient was covered with compresses dipped in iced water, which were changed when requisite, whilst ice-bags were applied to the head, chest, and back. Medicines were rarely administered, and only on pressing emergencies. Then follow the details of the ten cases, with which we shall not trouble our readers, but we append the more important conclusions he draws from their consideration. 1. The fatal termination of typhus cannot be prevented by the cold-water treatment in cases ending fatally through local disease of the intestine, as in perforation and intestinal hæmorrhage, nor in those cases that end fatally in consequence of intercurrent local affections, as in croupous pneumonia, nor in those who come too late under treatment with symptoms of fatty degeneration of the heart; nor in those in which with persistent high temperature certain contra-indications to the cold-water plan of treatment presented themselves, as failing power of the heart or intestinal hæmorrhage; nor, lastly, in cases in which reduction of the temperature cannot be satisfactorily accomplished on account of the existence of states of the system induced by tuberculosis or alcoholism. 2. He is of opinion that the existence of pneumonia is no contra-indication to the cold-water system. 3. The plan should not be persevered in if any bad symptoms supervene from the lowered temperature. 4. Fevers with well-marked remissions and exacerbations, if the latter are not very violent, yield to this treatment better than those in which the temperature is more moderately yet persistently high. 5. The individual power of resistance to the lowering of the temperature should be carefully watched in every instance, and this not by a mere reference to the thermometer, but by attention to changes in the pulse, the occurrence of delirium, of albuminuria, &c.; and if these are present, of course the baths must be discontinued. Lastly, they are of opinion that this method of treatment is widely applicable to this class,

if due care be taken. (*Zeitschrift f. rationell. Medicin*, Band xxxvi. Heft iii.)

Internal Administration of Carbolic Acid.—Dr. Habershon observes that in some conditions of weakness, especially when the bronchial tubes are dilated and the mucus is retained in the bronchi, putrefactive decomposition ensues, and the breath becomes extremely offensive. Again, in chronic bronchitis, the muco-purulent secretion not unfrequently becomes so offensive that the patient is greatly distressed. In these instances, as also in some stages of phthisis and in diphtheria, carbolic acid may be of great service when employed as an inhalation. It is however, he states, in some diseases of the alimentary canal that he has found most benefit from the internal use of carbolic acid. In many functional as well as organic diseases of the stomach fermentative action takes place; distension, pain, eructation, and vomiting, consequent on retention of the digested food in the stomach, are the conditions under which the advantages of the internal use of carbolic acid are most clearly displayed, partly, no doubt, from its power in checking cryptogamic development. It is not advisable to administer it where there is much irritability of the stomach, nor where there is redness of the tongue. It is, however, very serviceable in cases of atonic dyspepsia, of chronic ulcer of the stomach, when active ulceration has ceased, and in obstruction of the pylorus, whether arising from fibroid or cancerous disease. It should be administered with extract of henbane, with compound ipecacuanha powder, or it may, with the aid of a little gum tragacanth, be made to combine with quinine, iron, aloes, &c. When combined with lime or gallic acid, it may be used for flatulent distension of the colon, especially when this is accompanied by looseness of the bowels. (*Guy's Hospital Reports*, January 1870.)

Treatment of Gout.—M. Fontaine has recently published a memoir on this disease, in which he lays down a new method for its treatment. His work has been reported on to the Academy of Medicine of France, by MM. Bécларd, Vulpian, and Bouchardat, and from that report we gather the following particulars. In accordance with all observers from Sydenham to Garrod, he recognizes the value of colchicum, preferring the tincture of the seeds to the other preparations, and he administers it only in the form of injection, and not by the stomach, the functions of which, he thinks, are already too seriously disordered. The use of this remedy also, he maintains, ought not to be persevered in without occasional periods of interruption. To combat the diathesis, or rather to prevent the formation and to favour the destruction or elimination of the uric acid, he has recourse to three different alteratives: 1. The arseniate of potash; 2. The chlorate of

potash; and 3. The benzoate of lime. The arseniate of potash he administers in small doses, but for some length of time, and he conceives that this salt exercises a reparative action on the body and blood-globules, and a regulative action on the combusive operations. He proposes the chlorate of potash as an agent to oxidize the uric acid; admitting with M. Gubler, and believing that he has demonstrated from his own observations, that it undergoes partial decomposition in the economy. Following the example of Drs. Ure and Bouchardat, he prescribes the benzoate of lime, not with the object hitherto attempted of transforming the urate of soda into the more soluble hippurate of soda, but as a solvent for the urates, and for its slightly diuretic action. (*Bulletin de l'Académie Impériale*, Feb. 15, 1870.)

Chloral in Epilepsy.—Chloral bids fair to become the universal panacea, and the last disease said to be relieved by it is epilepsy. The following case is recorded by Dr. Weidner, of Jena: a young man, 19 years old, who had been suffering from epilepsy for three years. At first the fits were irregular, occurring on two successive days, and then intermitting for several weeks. Each attack was preceded either by a shriek or rapid change of temperature, with an aura of brief duration, as though a chill extended over the whole body. The loss of consciousness persisted for five or ten minutes. The tongue was usually bitten, and other ordinary symptoms of a fit of this nature were present. The disease appeared to be hereditary, the father as well as two brothers suffering from similar attacks. No cause could be assigned for their occurrence. The respiration and circulation, the sexual organs, the make and shape of the body and head, were all natural, and no marks of injury could be discovered on any part of the body. Latterly the attacks had occurred with great regularity once a week on the same day and hour. Two hours before an expected attack the patient was directed to take twenty-three grains of hydrate of chloral. In the course of a quarter of an hour he fell asleep. At the usual time of the occurrence of the fit he was lying quite still with tranquil respiration, and awaked free from any headache about three hours after the hour of attack. On successive weeks the same plan was adopted with similar results, and he is now taking bromide of potassium in gradually increasing doses, with every prospect of a permanent cure. (*Deutsches Archiv für klinische Medicin*, Heft i. 1870.)

Treatment of Trachoma or true Granular Lids.—Dr. Kittel gives the characters ordinarily presented by this troublesome and persistent affection in various cases, and also the following details of treatment in one of them. The patient

was ordered lapis divinus alcohol.¹ gr. xvj, aq. destillat. ꝑiv, tinct. opii ℞xx, liquor plumbi acetatis gutt. iij; the eyelids to be moistened with this liquid every two hours. Internally the patient was ordered inf. of senna, with sulphate of soda in small doses every hour. In the course of a week the lachrymation had ceased. He was now directed to have a small quantity of a mercurial ointment applied three times a day to the lids, composed of white precipitate four grains, and lard a drachm. After seven days again the ointment was replaced by vinum opii; after the employment of which for a fortnight only a slight nebula remained. (*Allgemein medicinische Zeitung*, No. 52.)

Indications and Contra-indications for Iron in Chlorosis.—M. Béhier states that ferruginous preparations should be prescribed whenever the number of red corpuscles falls below 80 per 1,000; the difficulty is to make the patient tolerate it. There is a difference between chlorosis with amenorrhœa and chlorosis with metrorrhagia: in the former iron is indicated; in the second it may augment the hæmorrhage, especially if administered at or near a menstrual period. When hæmorrhage is present, M. Béhier recommends that the iron should be replaced by the pills of Helvetius, containing alum and sandragon, to which a little opium may be advantageously added. M. Béhier considers that iron should be given during meal times, and not before. He has found pills composed of iron and manganese, as suggested by M. Pétréquin, very useful, being better supported than those of pure iron. He agrees with M. Trousseau in thinking that ferruginous salts may aid in the development of tubercle, and that in certain cases of anæmia iron may produce congestion of the lung and favour hæmoptysis. (*Lyon Médical*, March 27, 1870.)

Treatment of Arthritis deformans.—The term arthritis deformans is applied by Volkmann, in the last part of Pitha and Billroth's Manual of Surgery, to a form of disease that is apparently identical with the chronic articular rheumatism of English writers. It has been ascertained by Virchow to be an affection of great antiquity, as its marks are clearly recognizable in bones obtained from the graves of Huns in Pomerania. It consists of an inflammatory process, usually of many years' duration, materially altering the form of the joint, but never entirely destroying its capability of movement, nor ever terminating in suppuration or caries. It is rarely or never limited to one joint. The bone becomes expanded near the articular

¹ This preparation appears to be a mixture of equal parts of sulphate of copper, sulphate of alum, and nitrate of potash, which are fused together and combined ultimately with a little camphor.

extremity, the margins of the joint in particular being thickened and beset with nodules. The tissue of the epiphysis is unnaturally open, and the marrow of the cancelli oily. The cartilages are here and there hypertrophied, fibrillated, ossified, and laminated, sometimes presenting fatty degeneration, and wearing away with porcellanous deposit of the exposed bone. Intra-articular ligaments, like the lig. teres and cruciata and menisci, undergo fatty degeneration and fibrillation. The articular capsules become thickened, the ligamenta mucosa hypertrophied and villous, and in some rare cases ossified. In regard to its treatment, M. Volkmann strongly recommends iodide of potassium, or, still better, tincture of iodine, in doses of five drops in syrup three or four times a day. Colchicum, he thinks, is much less effective, nor has he a much higher opinion of aconite, guaiacum, or corrosive sublimate. Baths, especially those of Wildbad, Gastein, Teplitz, are very serviceable, as are also, in suitable cases, Turkish and Russian baths, and the hydropathic treatment generally. The affected joints should be used as much as possible, both actively and passively, and iodine may be employed hypodermically, as recommended by Schuh. (*Der praktische Arzt*, No. 12, 1869.)

Treatment of Snake Bite.—Dr. Fayrer, in an interesting series of experiments, in which he has tested the validity of the claim made by Dr. Halford for ammonia as an agent to effect a speedy cure of the bites of the poisonous snakes, appears to have arrived at opposite conclusions to those of the Melbourne professor. Large dogs were caused to be bitten after their veins had been exposed, and every preparation made for rapidly effecting injection, yet in these, sometimes after a brief space of temporary improvement, death rapidly ensued. The supposed remedy, liquor ammoniæ of sp. gr. '959 B. P., was in some instances injected directly into a vein, whilst in others it was hypodermically injected, but with equal ill success. Attempts were made to make a cobra bite itself, to make one cobra bite another, and to make a viper bite a cobra, &c., and the curious result was obtained that the poison of these animals has no effect, or if any, very slight effect upon itself, upon its own species, or upon venomous snakes, whilst it is injurious to innocent snakes. Dr. Fayrer thinks the poison acts by directly affecting the nervous centres, and that its action is far too swift and powerful to permit of the employment of any antidote. (*Edinburgh Medical Journal*, March 1870.)

Lotion for Pityriasis.—Hardt gives, in the *Union Médicale*, the following formula:—Nitric acid, 1 part; distilled water, 100 parts; the mixture to be freely applied to the surface of the affected part. Instead of this an oxygenated ointment may be

applied with advantage, composed of 30 grammes of fat and 1 gramme of nitric acid. (*Neues Repertorium für Pharmacie*, Heft i., 1870.)

On Galvano-Puncture of Nævus.—Dr. J. Duncan states that, having experienced the advantage of electrolysis in aneurism, especially in the cirroid variety, he was encouraged to hope, from the resemblance between this and nævus, that it would prove equally successful in this affection also. He details six cases, of which the following is selected at random :—

Case IV. was a nævus of the upper lid, with the skin completely involved. Two operations hardened the subcutaneous portion, which was thereafter largely absorbed. After two months, as it was again increasing, an operation was directed to the cure of the skin, which had not as yet been affected by the electrolysis. Its vitality was destroyed, and a black slough separated almost without suppuration. A cicatrix remained, but did not interfere with the motions of the lid.

There can, he thinks, be no doubt that every nævus is curable by electrolysis, though many forms may be more quickly and conveniently cured by other means. To effect a cure, the electrolytic action must not, as in cirroid aneurism, be limited to the occlusion of the main affluents, but must pervade the whole nævus, and act directly on almost every little vein. But electrolysis cauterizes the tissues as much as it coagulates the blood, and it is evident, accordingly, that when the skin is much affected a slough will be produced. The slough is tough and dry, excites little irritation, is singularly slow to separate, and does so without a drop of hæmorrhage, even though part of the nævus remains. It is therefore safe and effectual; but if a cicatrix must be left, there is reason for preferring the ligature as more safe and effectual. The galvanic apparatus is cumbrous, and in most cases the operation requires frequent repetition. On the other hand, he thinks this mode possesses many advantages in subcutaneous nævi about the head and neck, and remarks that there is a class of nævi beyond the reach of knife and ligature, and he gives an instance of one where the nævus so occupied the hand of a child (a year old) that the fingers protruded from the mass like small roots from a turnip. In this a very successful result was obtained by galvano-puncture, a few hard nodules alone ultimately occupying the palm, and the motions of the hand remaining perfect. Again, those on the cheek and neck are well adapted for it. Granting patience on the part of the patient and surgeon, he thinks in such cases it is superior to injection, ligature, or excision. He uses Bunsen's battery, and has no fear of the development of gas, or of its entrance into the circulation to any serious extent. (*Edinburgh Medical Journal*, March.)

Rheumatism complicated with Chorea cured by Bromide of Potassium.—M. Gaillard recommends the bromide of potassium, less as a remedy for ordinary chorea, on which it appears to exert but a doubtful influence, than for the more serious forms in which the fatal termination is caused by the disordered and incessant movements of the patient. M. Gaillard records a case in which the patient was a boy of fourteen years of age, who had suffered from chorea for five days, who could neither walk nor keep himself in the erect position. He threw himself out of bed five times in one night, and could obtain neither sleep nor rest; his skin became excoriated at various points by the friction of the surface with the bed-clothes. Sulphur baths and chloroform, given internally, were employed for several days without benefit. Fifteen grains of bromide of potassium were then administered, and increased successively to 30, 45, and 60 grains. From the first day considerable amelioration of the symptoms occurred, and the patient slept. The improvement became more marked day by day, and the cure was complete at the expiration of thirty-four days. (*La Revue Médicale*, March 12, 1870.)

New Form of Poultice.—In the last part of the *Nouveau Dictionnaire de Médecine*, M. Jeanel observes that the gelatinous silex suggested by De Mougeot, is particularly worthy of attention. It consists of silica, precipitated by hydrochloric acid from silicate of potash in solution, which has been washed till it is perfectly tasteless. If to this one-tenth of its weight of dextrine, or of gum-arabic in powder, be added, it forms, at a very small price, an emollient unchangeable poultice, which serves as an excipient for fatty substance or for any disinfectant, narcotic or stimulants remedy.

Treatment of Tinea favosa by Alcoholic Fomentations.—Professor Cantoni has recently experimented on the effects of fomentations of rectified spirit, in a case of tinea favosa, in which the crusts had been removed by the constant application of warm poultices. In this case a cure was effected at the close of the seventh week of the duration of the disease. It appears to be a plan worthy of further trial, both for its simplicity and effectiveness. The alcohol, in penetrating the epidermis, acts as an energetic parasiticide, and accomplishes the destruction of the achorion Schönleinii. It is important that the alcohol should be of sufficient strength. (*Journal de Médecine*, and *Bull. de la Soc. Méd. de Gand*, &c., Feb. 1870.)

Hypodermic Employment of Iodoform.—Dr. G. Du Plessis states that, on reading the monograph of Righini, the thought struck him that this remedy might be employed with advantage

by hypodermic injection, and he immediately cast about to discover some vehicle which would dissolve sufficient of it to enable the injection to be performed without risk. He found a solvent for it in ether, and immediately experimented with the solution in a case of tuberculous meningitis, attended, as usual, with violent pain, in a girl of fifteen. The pain produced by the injection was, however, intense, and he proceeded to try the effects of solution of iodoform in various essential oils, as in those of bergamot, rosemary, anise, and cajeput, but these presented the same inconvenience as ether. Ultimately he found a suitable agent in oil of almonds, the proportions used being one of iodoform to twelve of the oil, which was slightly warmed. He found that this quickly relieved pain in a case of herpes, accompanied by intercostal neuralgia, and considers it to be well adapted for all cases when pain is to be subdued. (*L'Imparziale*, 16 Marzo, 1870.)

Therapeutic Employment of Oxygen.—Dr. Buller reports three cases in which he found benefit accrue from the use of oxygen. The first was a boy aged 15, emaciated and weak, with pallor of face, constipated bowels, bad appetite, and apparent deformity of spine. The use of oxygen was now commenced, whilst iron and aloes were administered internally; in sixteen days he had completely recovered. The second case was a boy aged 14, emaciated and anæmic, with palpitation of the heart, night sweats and cough, bad appetite, and costive bowels. After inspiring four gallons of oxygen per diem for eight days, improvement set in, and resulted, in three weeks, in complete recovery. The third case was of similar nature in a girl aged 18, in which the inhalation of oxygen, accompanied by the internal use of aloes and sulphate of iron, effected a cure in a fortnight. There was marked increase in the temperature of the surface in this case after each inhalation. (*New York Med. Journal*, No. 5, vol. xi.)

Notes and Queries.

DEPARTMENT OF NEW INVENTIONS.

ANALYSES OF VARIOUS SAMPLES OF POTASSIUM BROMIDE.¹—All the samples examined contained bromide, chloride, and iodide of potassium, and also sulphate of potassium and sodium, these latter two salts forming in every case the greater part of the amounts given in the table under the heading of “other impurities.” Two of them (Nos. I. and III.) contained minute traces of bromate, and two (Nos. I. and VI.) traces of carbonate of potassium. No other impurities were found in any of the samples.

Particulars of the Samples analysed.

No. I. From Thomas Morson and Son, 124, Southampton Row.—White, very small crystals, dry. Contains slight traces of bromate and carbonate of potassium; traces of sulphate of potas-sium and sodium.

No. II. From Priest, 14, Parliament Street, Westminster.—White, moderately large, opaque crystals, dry. Contains strong traces of sulphate of potassium and sodium; no bromate or carbonate.

No. III. From Augustus Whitburn, 174, Regent Street.—White, small crystals, somewhat moist. Contains traces of bromate and sulphate of potassium and sodium; no carbonate.

No. IV. From W. Lambert Riddle, 34, Tavistock Place.—White, very large, opaque crystals, dry. Strong traces of sulphates; no bromate or carbonate.

No. V. From G. Mellin, 16, Tichborne Street, Regent Street.—White, tolerably large, somewhat opaque crystals, dry. Contains considerable traces of sulphates; no bromate or carbonate.

No. VI. From Mr. Edmunds, 8, Hercules Buildings, Lambeth.—White, moderately large crystals, dry. Contains very con-

¹ As this comparatively new drug is now coming into most extensive use, and enormous quantities of it are being manufactured and sold, it appeared right to the Editor to institute an inquiry into the average purity of the samples sold in respectable chemists' shops in various parts of London. A similar inquiry has been carried out in Paris, with results which were recorded in the *Practitioner* for July 1869.

siderable traces of sulphates, and strong traces of carbonate of potassium; no bromate.

100 parts of the salts contained:—

No.	POTASSIUM.				
	Moisture.	Bromide.	Chloride.	Iodide.	Other impurities.
I.	0·40	93·52	4·75	0·240	1·090
II.	0·47	93·07	5·04	0·018	1·402
III.	1·03	89·79	8·16	0·021	0·999
IV.	0·67	94·07	3·81	0·045	1·405
V.	0·31	91·90	5·25	0·062	2·478
VI.	0·60	92·61	3·67	0·352	2·768

CORRESPONDENCE.

MISCELLANEA THERAPEUTICA.—Dr. R. G. Daunt, Campinas, Brazil, sends us the following:—

“I was surprised to see lately the ipecacuanha treatment of dysentery spoken of in the *Practitioner* as a practice necessary to be recommended. Here in Brazil it is the principal domestic remedy after a cooling laxative. What is the practice of English-speaking physicians as to the choice of a preparation? Here the decoction in strong doses is preferred as the best anti-dysenteric form in which to give ipecacuanha: in twenty-four hours the decoction of half an ounce to an ounce of the bruised root. I saw with surprise that Gubler, in his semi-official commentary on the French ‘Codex Medicamentarius,’ gives a most scanty notice of this drug, and is silent as to the non-emetic and anti-dysenteric virtues of the decoction. Gubler, it must always be remembered, represents the sceptic material school of Paris, and is not much of a believer in drugs.

“Brazil possesses another plant called Espelina; the *Perianthopodus espelina*, which is considered as equal, and even in many cases superior, to ipecacuanha, and also as an alexipharmic. It would be well if the administration of some great hospital ordered from Rio de Janeiro some pounds of the root, which is cheap, and instituted trials. The dose may be equal or superior to that of ipecacuanha. This recommendation might be extended to very many other Brazilian vegetable products.

“What is known in England as to the value in pulmonary diseases of a substance called strangely *Helicine*, which is the product by distinctive distillation of spiraic acid? It is prepared in Germany. We have it here, as in Brazil, the medicine and population of the whole world being represented, the

apothecaries' assortment of drugs is equal to the lists of all the Pharmacopœias and to the medical practice of all countries. Among the many physicians I have known here was one who had held an employment in Magnesia, in Asia. He afterwards died of yellow fever in New Orleans.

"What is the real value of chlorine (the aqueous solution) in typhoid fever? Hufeland lauds it. Gubler and others say that if it has power to destroy the organic miasms which circulate in the blood in fever, it must be equally destructive of the life of the blood-globules. Is the use of alumina (*Terra argillosa*) in the state of hydrate known in England as a valuable remedy in chronic diarrhœa in children and debilitated patients? It is used in Saxony, and considering the high price of bismuth (also much preferable in the form of the hydrated oxide) I think it deserving of trial in public institutions. Is bryony (its tincture) used in England in pneumonia? I use it in the latter stages subsequently to the veratrum viride. An apothecary's assistant from Vienna informs me that Skoda employs bryonia very frequently in pulmonary disease.

"What is the proper treatment—can there be any effectual (or efficacious, I believe, is the English word)—for softening of the mucous membrane? Is the *allaitement* (suckling) of children by pregnant nurses or mothers considered prejudicial to the children? Here in Brazil it is fatal to them. The diarrhœa which attacks children who have ingested the milk of a pregnant woman is, as a rule, incurable.

"What real value has the pulvis antimonialis of the British Pharmacopœia of 1864? I cannot believe that this preparation is the true James' powder. The white oxide of antimony employed in forming the officinal powder is in my opinion a preparation of equal value with tartar emetic; and if I were to be deprived of one of these remedies, I could more easily dispense with the tartar emetic. But the dose of the white oxide to produce good effect must be *at least* one drachm of 72 grs. in the twenty-four hours for the adult, and 24 to 36 grs. for children; while James' powder is said to be, and I believe is, useful in comparatively insignificant doses. Has any one given ʒij of the pulvis antimonialis in twenty-four hours? I give the corresponding quantity of ʒj of the white oxide of antimony without the slightest emetic or cathartic action. On the contrary, its action is as mild, as efficacious, and when children suffering from intestinal irritation (diarrhœa, red tongue) are attacked with pneumonia, I give fearlessly ʒj or ʒss (up to three years of age) in the twenty-four hours, mixed with the true *oculi cancerorum*, which we have here imported from Russia. The doses recommended by Trousseau are, I believe, larger, and in case of need I would administer such larger doses with entire confidence."

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¹ Any of the foreign works may be procured by application to Williams & Norgate, of Henrietta Street, Covent Garden, W.C. ; or Messrs. Dulau, of Soho Square, W.C.

THE PRACTITIONER.

JUNE, 1870.

Original Communications.

THE DIAGNOSIS OF PNEUMONIA, AND ITS TREATMENT BY RESTORATIVES.

BY OCTAVIUS STURGES, M.D.

IN a paper published in the St. George's Hospital Reports, I endeavoured to show, from a review of a large body of cases, that the term pneumonia was very widely applied. It appeared, for example, that the name was used in some instances to describe the local effect of a blood-poison, whilst in others it denoted a condition which was mainly due to mechanical obstruction; only in a few cases did it apply to that solidification of the lung which arises from the presence of an exudation, and where the existence of pleurisy, and sometimes of pericarditis, seems to indicate that the pneumonia is but one amongst many expressions of the hyperinotic state of the blood. That this should be so where error of diagnosis was out of the question, and every case was named according to the supposed evidence of the post-mortem examination, argued, I thought, that the boundaries of pneumonia were not very strictly defined. It would have been easy to enlarge this list by including instances of pulmonary collapse and of congestion occurring to infants and aged people, and described as lobular, or as low pneumonia. It is acknowledged indeed, at present, that these conditions, for the most part, have no connection with inflammatory action;

but the effects of the earlier teaching may be said to linger, while we continue to insist upon the exceptional character of simple pneumonia in children, and still speak of bronchitis as frequently "lighting up inflammation in the pulmonary parenchyma."

Regarding, therefore, the very wide associations of this word pneumonia, I ventured to urge that we are still in want of a sufficiently rigid definition, and endeavoured to show that no account of the disease could be accepted which kept out of view those express phenomena of temperature, secretion, crisis, and the like, which serve no less than the physical signs to distinguish inflammation of the lungs as a specific disease.

It need hardly be said, were not the contrary so impressively taught, that the sounds within the chest, or to be elicited from it, can never in themselves apprise us of the fact that the lung is inflamed, or do more than indicate the physical state of the organ. It might be, indeed, that certain sounds should occur only in association with a certain diseased state. If that is ever the case, it certainly is not so in regard to any of the sounds of pneumonia. Minute crepitation will accompany the engorgement which is preliminary to hepatization, and it will accompany other engorgement: similarly tubular breathing, altered voice, sound, and the rest, will be heard in a lung solid from pneumonia, and it will be heard equally in a lung solid from any other cause. We come, indeed, from habit to connect particular sounds with particular diseases, when the concurrence of these is very frequent, so that the one irresistibly suggests the other. At the same time we never quite lose sight of the fact that the inference may be wholly erroneous. With pneumonia it is otherwise. "Minute crepitation," we have been taught, "is a direct symptom, having immediate reference to the structure of the part. We cannot too highly value this single symptom, which gives the earliest and surest intimation that such a disease has begun as tends to disorganization and the inevitable loss of life unless quickly arrested by its counteracting remedy." I do not say that this language of Dr. Latham's would be entirely endorsed at the present time, but, rightly or wrongly, we are still under its influence. Often, for instance, in the wards one hears it said, upon this evidence of minute crepitation, that consoli-

dation is impending, and often the result does not so turn out. In such case we are apt to assume that the natural course of the disease has been arrested by treatment, and thus at once sustain our belief in the uniform progress of pneumonia, and the curative action of drugs.

But there is a more modern view of pneumonia, which tends to exalt the value of physical signs by denying the value of all others: the hypothesis, I mean, that the essence of the disease consists solely in the presence of a solid exudation which undergoes certain changes. This morbid state of the lung, it is asserted, bears "no relation whatever"—meaning, I suppose, no fixed and constant relation—to the symptoms of the individual. Circumstances of temperament or of previous health may modify these indefinitely, so that while the course of the exudation, apart from mischievous interference, is remarkably uniform, its outward phenomena may be anything or nothing. "It would be easy to show," says Dr. Bennett,¹ "that there are many cases where all the symptoms of a pneumonia have been present, but where a post-mortem examination has proved that there was no inflammation of the lungs, and a still larger number where fatal pneumonia has occurred without any of its symptoms having existed during life." It would be impossible to express in stronger language the sufficiency of physical signs to indicate pneumonia, or the utter insignificance of all other evidence.

Now it is obvious to remark that exudations which arise in such various ways are not to be taken as identical, because sometimes at a single point in their history they exhibit the same appearance under the microscope. The future of an exudation is dependent upon the circumstances of its birth and origin, and its nature cannot be recognized until its history is completed. Certainly we know that some exudations lead with a singular malignity to disorganization of the lung, whilst others have no such tendency. Is it to be conceived that this difference is not inherent in the process itself, or that we can know anything of an exudation except by means of the phenomena to which it gives rise?

Assuming, however, the correctness of that pathology which ascribes pneumonia—the local, physical part of it—to an exuda-

¹ Treatment of Pneumonia, *Practitioner*, vol. ii. p. 263.

tion, it follows that the distinctive auscultatory signs of the disease are not reached until solidification of the lung-tissue is made out. Crepitation (the smallest, crackling, equal, with inspiration only¹) must depend upon a condition of the lung short at least of this. Nor is there anything in the character of that sound to show that the exudation is surely coming. But is the further evidence of consolidation conclusive, taken alone and regardless of any other symptom whatever? I think, on the contrary, that the fact of a lung becoming solid without the concurrence of a certain group of symptoms, argues conclusively against pneumonia; for we have a body of facts to show that when an exudation takes place into the previously healthy lung it never does so silently, but always with symptoms of great definiteness, and we have an equal body of facts to show that consolidation as a secondary condition occurs often and in many ways apart from all these symptoms, and apart, too, from exudation, considered as an inflammatory product. Allowing even that the consolidation which occurs in the so-called latent pneumonia may sometimes resemble in all anatomical points the consolidation of the simple disease, it is enough to observe that we are without the means to distinguish these cases during life. Pneumonic consolidation is recognized as such by its accompaniments. The likeness, such as it is, of this latent variety can only be discovered at the post-mortem table.²

¹ It is necessary to be particular in alluding to the characteristics of this crepitation, because Grisolle, in his elaborate monograph, has contended that the sign has been undervalued from its being confounded with the subcrepitant râle. It is with this remark that he dismisses the objections of Andral and Cruveilhier, who asserted that minute crepitation indicated nothing more than capillary bronchitis, a conclusion which the minute anatomy of the lung would seem to render obvious. (Grisolle, *De la Pneumonie*, p. 474, 2^{me} édit.)

² I find, upon reference to a recent author, that latent pneumonia "is unattended by the ordinary general symptoms of the disease," and, further, that "the mischief partakes of the character of congestion, resulting in sero-plastic effusion rather than of active inflammation;" in effect, the definition of latent pneumonia is that it is not pneumonia at all. Perhaps the form of expression nearest of kindred with this is "suppressed gout;" both terms imply a condition which means more than it expresses, and whose proper phenomena are lurking somewhere, but by some mysterious agency veiled from ordinary eyes. But "suppressed gout" is obsolete; latent pneumonia, on the contrary, is credited with a large number of deaths, especially amongst infants and old people. (See Dr. Fuller on Diseases of the Lungs, 2d edit. p. 276.)

It is unnecessary to speak at length of any other single symptom supposed of itself to be pathognomonic of pneumonia. No one is likely to propose that the diagnosis of the disease should be undertaken without reference to its physical signs. Yet it may be boldly stated that if the question had to be determined from one symptom alone, the evidence of the sputa would be by far the most reliable. Sometimes, indeed, from this source alone we get ocular proof of a moulded exudation existing in the immediate neighbourhood of the air-cells; but, failing that, the intimate mixture of blood and mucus which gives rise to rust-coloured spitting is an appearance not even imitated when the two come together under any other circumstances. True rusty, viscid, uncrated sputa are conclusive both as to the seat of the lesion and as to its general nature. This occurrence therefore, in conjunction with minute crepitation, cannot but suggest pneumonia; the combination is in fact commonly recognized as indicating its first stage. Nevertheless, if exudation be the essential part of the pneumonic process, it can scarcely be said that these two signs constitute the disease; they denote at most a state of active congestion, which is its immediate precursor. Sometimes, indeed, the so-called pneumonic crepitation, with this accompaniment of rusty sputa, will abide for an indefinite time without pneumonia ever being fully developed. The two symptoms may be present along with a condition of the blood the very opposite of that which is capable of furnishing the true inflammatory exudation. Whilst, therefore, we are warranted under these circumstances in regarding pneumonia as imminent, and acting as though in its immediate presence, we cannot in strictness, if the physical signs go no further than this admit such a case into our reckoning. It is at best an example of pneumonia arrested at an incomplete stage, and, however satisfactory in itself, is of little practical service, since, as yet, no attempt, statistical or otherwise, has been made to ascertain by what means the disease may thus be strangled at its birth, but only to determine its treatment when fully born and recognized.

The case is different when along with true rusty sputa we have the further evidence of recent consolidation of the lung. Must not this be accepted as sufficient ground for diagnosis? I think so; but I think also that this combination is rarely,

if ever, seen without other signs being also present to place the existence of pneumonia altogether beyond question. It is unnecessary to speak of each of these separately—the fever, the pulse-respiration ratio, the *pose*, the aspect, the cold breath, the marked crisis; none of these things singly constitute pneumonia, yet in each of them there is something distinctive, whilst by their frequent concurrence they signalize inflammation of the lungs as an affection no less remarkable for its definite effects upon the organism than for the local physical changes it produces, as much to be recognized by the one as by the other.

It thus appears that the practical difficulty in pneumonia is confined to those instances in which its characteristic features are more or less modified, or some of them altogether absent. It cannot be that this disease more than any other should have a history absolutely uniform, or that the whole *rôle* of its symptoms should be displayed on every occasion. No rigidity of definition can be applicable in practice to decide the nature of doubtful cases. It may be possible, nevertheless, in an affection exhibiting such special phenomena, to distinguish between accidental and invariable symptoms, or at least to come to some agreement as to what may and what may not be received as pertinent examples of pneumonia in statistical inquiries. With this view it may not be irrelevant to notice both the circumstances under which simple pneumonia is wont to arise, and the connection which can be made out between its physical- and its general symptoms.

It need not be said that the most marked instances of the disease occur in previously healthy persons; in these it is found that the onset of the affection is usually clearly traceable to a definite exposure of the body, and of all exposures the one which operates most remarkably is a driving east wind. That is the conclusion to be derived both from the histories of individual patients, and from the season of the year when most cases of simple pneumonia are admitted into hospital. It would appear to be confirmed by the Registrar-General's Reports. It may be gathered thence that the mortality from both bronchitis and pneumonia (in England there is a pretty constant correspondence between the two) rises whenever the wind changes to the east, and the horizontal movement of air is great. In short, so far as I could make out, it would be difficult

to name any other single condition whose influence was so potent. It was found, indeed, as everybody knows, that the summer was more favourable than the winter, but it was not found that very great cold uniformly affected the death-rate nor very great heat; but whenever the wind set from the east, or rather whenever it *blew* from that quarter, the mortality from pneumonia and bronchitis would straightway rise—rise, that is, for a time upon the first shock of the change, and then, though the same wind might continue, the increased rate would gradually fall. We must beware, however, of laying too much stress upon these death returns. Not only is pneumonia a disease of rare fatality under any circumstances, but there are counterfeits of it which, though they assume its name, are often rather the consequence than the cause of death. The connection between bronchitis and true lobar pneumonia is not an intimate one; so much is admitted by most writers. But the affection which goes by the name of broncho-pneumonia, and which is sometimes pulmonary collapse, and sometimes hypostatic congestion, and always widely different from the disease we are discussing, is almost necessarily associated with bronchitis. Such cases are being registered in London every week, and especially amongst children. The majority of deaths from pneumonia is always in the column relating to infants, and the lobular pneumonia which is usual with them is the most equivocal form of lung inflammation known to us, as well as the most difficult to recognize from physical signs.

There is another cause manifestly influencing pneumonia, which, while it rests upon better evidence than the weekly returns, must inevitably raise an hypothesis which may be true or false—I mean the influence of great altitudes. In such regions, while phthisis is almost unknown, inflammation of the lungs is exceedingly common. The remark appears to apply to high mountain ranges all the world over. Whether or not the disease so named is absolutely identical with true pneumonia, it seems obvious to remark that a diminished atmospheric pressure, together with increased functional activity on the part of the lungs, are conditions which must directly favour the occurrence of an exudation into the air-cells closely resembling the product of the inflammatory process.

But whatever be the exciting cause of an exudation, it is

essential to my present purpose to maintain that it can only be recognized as pneumonia, when along with physical signs we have a train of clinical phenomena which within certain limits are perfectly definite and uniform. It is true, no doubt, that the changes which take place in the lung appear sometimes to be independent, as regards time, of the course of the general symptoms; at least it is not always possible to detect the manner of their correspondence. Not only does the fever anticipate the exudation by an uncertain period, but the latter will sometimes linger long after the crisis, which is so remarkable a feature of the disease, has occurred, and the active stage of the affection is accomplished.

It happens sometimes that the period of crisis is nearly simultaneous with the period at which exudation is completed, as though by this act the energy of the disease, so to speak, were expended, or the end in view thereby accomplished. Thereupon, though the exudation remains, the symptoms which marked its advent disappear at once and for ever. They do not abate, they vanish; even the dyspnoea—which of course cannot wholly subside so long as the breathing apparatus is invaded—even this, though it remains the longest, moderates, and the lung accommodates itself to its new condition. By and by, when the exudation begins to be removed, when resolution commences, that occurrence is unattended by any marked phenomena on the part of the system, and might easily escape notice altogether.¹

If this be so, the event of exudation is the turning-point in the disease, and the time of safety to the patient is not when resolution begins, but when exudation has ceased. It is often, indeed, at this period, that the sudden appearance of typhoid sinking first announces the probability of a fatal issue. The remark has an obvious bearing upon the views of those who would have us watch pneumonia without actively interfering with it, maintaining, with Dr. Bennett,² that its progress is to be

¹ This connection between completed hepatization and the subsidence of acute symptoms is particularly insisted upon in a valuable paper upon simple pneumonia by Assistant-Surgeon Welsh, who enjoyed a rare opportunity of observing the natural history of the disease in the 22nd Regiment, on its removal from Malta to North America. (See the *Army Medical Reports*, 1867.)

² “*The Restorative Treatment of Pneumonia*,” by Dr. Hughes Bennett, 1861. It does not belong to the present purpose to discuss the pathology of pneumonia,

estimated by the progress of the exudation, and by that alone. Now it will scarcely be affirmed that the physical changes which occur in any case of pneumonia up to the completion of hepatisation enable us to predict with any degree of certainty what will be its subsequent history. We may, of course, roughly estimate the degree of a patient's danger by his present condition, but there are no means of distinguishing beforehand between cases which at the critical period shall suddenly revert almost to health, and cases which at the same point shall exhibit for the first time those signs of sinking which are the sure harbingers of death. In other words, it is only by the event that we learn whether pneumonia may safely be left to itself, or whether by so leaving it we surrender the patient to a disease calculated to destroy him. A mode of treatment based upon the hypothesis just noticed has received the name of "restorative." It is not suggested by the advocates of this method that it tends to defer or arrest exudation; on the contrary, the object in view is to support the patient during the progress of certain pathological changes, whose natural tendency, it is affirmed, is towards recovery. Such treatment is admirable for the favourable cases, but the very terms of its statement imply that its application must be strictly limited to these. Nor would this limitation restrict the "restorative" treatment very considerably. Simple pneumonia, excluding the two extremes of life, is not a disease of high fatality. But cases do occur now and then where the tendency is not towards recovery, but towards death—cases in which, though the exudation is fulfilling its usual history, the patient is dying the while. What we seek is a treatment which shall be restorative to these, and no system can be complete which virtually leaves them out of sight. It is true that allusions are made by Dr. Bennett, and others who think with him, to the salutary effect of small bleedings, or the need sometimes

but I may notice, by the way, that Dr. Bennett describes the exudation as being at first molecular, and afterwards, by "molecular coalescence," becoming converted into pus-cells. In no instance, however, have I succeeded in discovering this molecular exudation present by itself, or any appearance to warrant the belief that the pus-like cells are built up out of this molecular material in the manner described and figured by Dr. Bennett; I think the exudation must contain them from the very first; that they must pass out of the blood into the air-cells. (P. 50, *op. cit.*)

of direct stimulation by alcohol. While the fact may be noted as an unwilling admission on the part of these writers that active interference may now and then be necessary, it must be added that the direct effect of these measures is never allowed its proper weight; they are mere adjuvants to the "restorative" treatment, they are never themselves the means of saving life. Yet is it not obvious that bleeding or active stimulation will never be resorted to by these physicians except on the ascertained failure of their "restorative" method, and that the employment of these means is not to be regarded as supplementing such treatment, since it plainly contradicts the hypothesis upon which it is founded?

Dr. Bennett's success with pneumonia seems mainly due to the fact that he does not permit his treatment to be too closely fettered by his argument.¹ It is unnecessary to repeat now what has been said elsewhere against the conclusions of his statistical tables. Every one who has attempted the task must be aware of the extreme difficulty of including every necessary particular in thus bringing a multitude of cases under one point of view. It was essential to the purpose that the tables should comprehend a large number of persons who must have recovered under any treatment whatever, and it was inevitable that a large number should not in strictness be illustrations of any particular treatment from not coming under observation until late in the disease; thus of 125 cases there are at least 53—excluding four undated—which were not seen till on or after the sixth day. I would rather take exception to the cases on the ground that they are of a heterogeneous kind—sixty-eight only were in good health to start with—linked together owing to a community of auscultation signs, and that we are not told in any one instance what was the nature of these sounds.

In considering the circumstances of fatal cases of pneumonia, the question may well occur whether death is always inevitable; is it not rather reasonable to hope that we may one day be able—even, it may be, by following some very precise system of drug treatment—to save more lives than at present? The condition of the patient seems to be one which it is within the pro-

¹ *E.g.* Case 116, "Saved by 3ss of wine every half-hour."

vince of drugs to ameliorate: could we relieve, for instance, by blood-letting or otherwise, the venous congestion, or stimulate directly the action of the right ventricle, or even arrest the exudation by means of alkalies, as it seems possible to do in pericarditis? Every one, in fact, has his own method of encountering extreme cases of pneumonia. Dr. Bennett, as we have seen, relies upon alcohol, others have spoken highly of chloroform, and many retain an unshaken faith in the power of antimony. Concerted observations upon the results of treatment, when circumstances thus imperatively demand active measures of one kind or another, are much needed; they might fitly supplement the labours of those who have succeeded in showing that pneumonia, as a rule, does best without the aid of drugs. It is vain, however, to set about any such inquiry so long as the word retains its present wide signification, and latent pneumonia is allowed a place in our nosology. Inflammation of the lungs, that it may be known as such, and distinguished from other exudations physically like it, must have its own proper symptoms. The burning skin, the diminished chlorides in the urine, the marked crisis, the posture and aspect of the patient, all of these, equally with the physical signs, are integral parts of the disease. Subordinate to these are such symptoms as rusty sputa, or great perversion of the pulse-respirations ratio. These things belong, indeed, to pneumonia, but it is easy to see that their absence implies nothing more than a modification in the degree of it. A certain margin of variation must be permitted to every disease, and it is always possible, by a comparison of cases, to distinguish essential from non-essential symptoms. But it must ever be insisted that pneumonia is not an anatomical condition but a substantive disease, and that it is impossible to separate its pathological from its clinical part without altogether destroying its identity. However words may change—and there is little reason to cling to this one—we may rest assured that a combination of phenomena so definite and so striking will always deserve a name of its own. Consolidation of the lung, on the other hand, has such various associations that it can serve no useful purpose to group diseases together only because they share this condition in common.

I would only add, that if these remarks are true at all, their

application need not be confined to pneumonia. Morbid anatomy can never be the sole basis of medical practice, nor can the physician of the present day afford to neglect those signs of face and pulse and posture which are its living interpreters, and whose language is not the less valuable to us now because of old it sometimes misled those who had to trust to it alone.

ON THE VALUE OF A LARGE SUPPLY OF FOOD IN NERVOUS DISORDERS.

BY G. FIELDING BLANDFORD, M.D. OXON., F.R.C.P.

AMONG the various therapeutical agents and innumerable drugs advocated and employed for the relief of nervous weakness, and the cure of the disorders which thence arise, it is possible that the unaided effects of food may not in all cases have met with the trial they deserve. Patients thus afflicted are told to live well and adopt a generous diet, but the generosity of this is usually estimated by the amount of port wine or other alcoholic stimulant, rather than by that of the bread, mutton, or beef.

Certain chronic invalids who have been brought under my notice have been lifted out of their former condition of "nervousness" by a large increase in the quantity of their food. They have been people suffering from some general neurosis, taking the form of an insanity of a low and depressed character, or hypochondriasis, hysteria, alcoholism, or neuralgia, affections closely allied one to another, which may be witnessed in one form or other in individuals inheriting the same neurotic temperament. We may see different members of the same family displaying one insanity, another neuralgia, a third hypochondriasis, while the conversion of one variety into another is a matter of every-day observation.

A paper on "Indiscriminate Stimulation in Chronic Disease," from Dr. Anstie's pen, appeared in this journal in July last. With all that he says I cordially agree, and more on this portion of the subject need not be urged at present. It is a matter of the gravest importance that the treatment of such cases should not be conducted by means of unlimited supplies of alcohol.

If we inquire into the past history of nervous patients, and have the opportunity of learning accurately the facts thereof, we often find that for a considerable time the supply of daily food has been in no degree adequate to the necessities of the individual. Here is a common case. A man somewhat past middle life, but whose years do not imply senile decay, becomes unfit for business, fidgety, irritable, depressed, or even melancholic to the extent of insanity. We hear that he has been a hard-working man of business, always nervous, and very probably an indifferent sleeper. Being most heavy for sleep in the morning, he has risen at the latest moment, and, snatching a mouthful of breakfast, has hurried off to catch the train or omnibus, worried and anxious lest he fail to reach his office at the hour appointed. At lunch-time, if he be really hard-worked, he takes, not a meal, but a sandwich or biscuit, eaten perhaps standing, and often bolted in so great a hurry that digestion is difficult; he tells us that he dare not take more of a meal in the middle of the day, for he would be rendered unfit for the remainder of his work. In the evening, with what appetite he may, he eats his dinner, perhaps not before half-past seven o'clock. Now, granting that his dinner is amply sufficient, such a man lives on one meal a day with very little besides. These are the persons who cannot go on without frequent holidays; nervous by inheritance, they break down because they are insufficiently fed. A holiday, during which they live better, builds them up again for a time, again to break down; often to fall into the condition above-mentioned. Another class among whom we may frequently witness the same result and corresponding symptoms are the clergymen who for various reasons deny themselves an adequate amount of food. Either they fast rigidly, according to the rule and doctrine of the day, often allowing some hours to elapse before they break their fast, or they think that hearty eating is a snare and a carnal enjoyment, or they hold it sinful to eat their fill while others are in want. Whatever the cause, certain it is that many of the clergy break down in one or other of the forms of nervous disorder already enumerated, and an enlarged dietary is to them a necessity. A vast number of women, for one reason or other, take a very small supply of food: some think it unladylike to eat heartily; some eat on the sly, and when this is

not practicable go without. Many from the lives they lead are doubtless correct in saying they cannot eat because they have no appetite. These stay in the house from month to month, or never venture beyond the door except in a carriage, because ladies do not walk in the streets. Others have misgivings on the score of their digestion. Like many women who lead sedentary lives, and habituate themselves to passing long periods without action of the bowels, they suffer greatly from constipation, which is looked upon as an indication and a warning that they ought not to eat. So they starve themselves, and fancy that if they abstain from food it is of little consequence whether they pass a motion once a week or once a fortnight.

It may be well to consider somewhat more in detail the various neuroses which have been mentioned.

The first on the list is low nervous depression, commonly known as melancholia, the most formidable of all that have been named, the one most likely to run in a short time into serious and even fatal insanity, but which, if arrested at an early stage, is often singularly amenable to treatment. In almost every example of this variety, and almost from the commencement, we find a marked disinclination to take food, and in extreme cases it can only be administered by some kind of forcible feeding. In milder cases, and at an early period, it will be taken if we insist upon it, and the result of a large supply is frequently manifested in a very brief time. It has been asserted by many writers that refusal of food on the part of melancholic patients is due to dyspepsia, and in confirmation of this opinion they point to the foul and furred tongue, the obstinate constipation, and the fœtor of breath so constantly observed in such patients; but this condition of tongue and fœtor are due, I am convinced, not to gastric disturbance, but to the generally depressed and devitalised state of the individual; and the best proof of the absence of dyspepsia is that, although we suddenly compel the ingestion of what, compared with that previously taken, may be called an enormous quantity of nourishment, the stomach by no means rejects it, but, on the contrary, retains and digests it, as is shown by the rapid amelioration which takes place. It is inconceivable that dyspepsia can be the cause of refusal of food when the administration of it is unattended by sickness or inconvenience,

even when that which is taken into the stomach is not light invalid diet, but such substances as beef or mutton. From my own observation, and from the subsequent confession of patients, I am inclined to believe that the refusal of food is in almost every case the result of delusion, this being in turn the result or interpretation in consciousness of the extreme nervous depression and exhaustion under which they are labouring. They are too wicked to live, too wicked to eat; it is sinful to pamper their flesh and their appetites; they beg for cold water and dry bread, but the idea of a good dinner their soul abhors. If we see such sufferers at an early stage when forcible feeding is not necessary, and they will take that which is ordered, merely protesting against the uselessness or wickedness of the proceeding, we may prescribe a very large amount of food without fear, nay, with a confident expectation of the greatest benefit. What the food is to consist of is a point on which little need be said. It is not necessary to adhere to a sick diet,—to beef-tea or boiled mutton, to essences of beef or Liebig's food, or any other of the concentrations so loudly recommended. The ordinary diet-list of the individual in health may be given without hesitation—fish, game, poultry, meat, puddings, and the rest. His appetite should be stimulated by variety, and his dishes may be savoury as well as wholesome; but the supply must be large. Such patients for the most part have accustomed themselves to eat during the day a scanty and insufficient amount, and we shall be told that latterly they have not taken half their usual quantity. It is not too much to say that they require double that which they have so long taken; and as we shall not be able to induce them to eat double the quantity at a single meal, it will be necessary to multiply the number of the meals. Instead of breakfast, lunch, and dinner, two of which have probably been but the semblance of a meal, we may institute a series of feedings after this kind: first, something may be given early in the morning, before the patient gets up, as rum and milk, egg and milk, chocolate or *café au lait*. This will be useful in allaying the feeling of extreme depression and dispelling the gloomy and suicidal thoughts so constantly present on first waking. Next, breakfast may be taken, after dressing, and between it and a two-o'clock lunch something else, as beef-tea or a sandwich. The

dinner-hour should not be later than six, and at bedtime some light kind of supper should not be omitted. By this kind of division food may be administered six times in the day; and if the patient wakes in the night, and is restless and nervous, and disinclined to sleep again, food, taken even in small quantity, will often bring back sleep. With all this food may be given a reasonable amount of wine, or wine and stout, and this not by way of curing the disorder by stimulants, but because in conjunction with them less food appears to be required, and also because the addition of some wine or beer often renders the taking of the food more easy to the patient.

Now the latter, and it may be the friends, will protest loudly that it is impossible to take this quantity: he will assign every conceivable reason for avoiding it; but if we are firm and insist, and, if necessary, cause him to be fed with a spoon, he will retain and thrive on it, and in a few weeks, or even days, will show very marked signs of its good effect. Patients have recovered under this treatment in a singularly rapid manner. Some learn in a short time to appreciate the benefit of the food, and miss their meal if from any cause they are unable to take it at the appointed hour, and some have gone on for years after their recovery taking, not the quantity prescribed during the acute stage of their illness, but one very much larger than that on which they had endeavoured to live for so long, and under such a change of regimen have lost all trace of the depression and hypochondria from which they formerly suffered. Although beef-tea, chocolate, and milk have been mentioned as articles of diet, it by no means follows that liquids are to predominate: on the contrary, solid food is far better as a sedative, and also far more nutritious, and it may be taken as in health. Much has been said concerning the advantage of fatty food in nervous disorders, and sugar has been thought to disagree with these patients; but in my own experience I have found that all the various foods—the fatty, the starchy, sugar and meat—may be given in due proportion at any rate to the individuals now under consideration. If this amount and description of diet be administered, there will be little need of medicine, except perhaps of morphia or chloral to procure sleep at the commencement of the treatment.

The next variety of neurosis in which the efficacy of abundant food is markedly shown is alcoholism, whether acute or chronic. I shall not here enter upon the question whether delirium tremens is ever caused by the withdrawal of alcohol; controversy upon this point is not yet at an end, and it will exist so long as we are ignorant of the precise pathological cause and condition of delirium. But whether alcohol is to be entirely avoided or not in the treatment of this disease, it is, I believe, an established fact that abundant nourishment, not spoon diet, but solid food, should be given as soon as the stomach can retain it. The irritability of the latter is a difficulty to be met in various ways, and owing to this we may at first be obliged to resort to concentrations of food; to Liebig's extract, various preparations of beef-tea, and so on. It would appear that sleep is far more easily procured, and medicines given for it are far more efficacious, if an abundant supply of nourishment is administered at the same time.

It is rather, however, in chronic alcoholism that the good effects of food may be witnessed. Here it is often of the greatest consequence to abolish alcoholic stimulants entirely; in fact, in such abolition lies the only hope of effecting the reformation of the chronic drinker. The intense sinking and craving for the accustomed stimulus may often be effectually met by food, especially if a small quantity be given frequently, as recommended already. Such patients are unquestionably most difficult to deal with: they assign reasons of all kinds for rejecting food, and for being treated by their favourite remedy. They are faint, they require support, they suffer from stomach ailment, from pain, from want of appetite, nausea, or sinking; but they rarely vomit that which they take if drink is withheld, and this is a tolerably sure sign that the stomach is equal to the digestion of the food. The symptoms of alcoholism need not be here described; but whether they be the transient and immediate results of a heavy debauch, or the graver signs of commencing degenerative change of the nerve-tissues, which runs on to alcoholic paralysis, epilepsy, or dementia, food is equally demanded, and is in fact the one thing which can arrest this degeneration by supplying nutritive elements in large quantities. The recovery in such cases is often astonishing. I lately saw a

young man who for many weeks was completely paraplegic, but who nevertheless entirely regained the use of his limbs. The recoveries, too, from alcoholic dementia are often equally surprising; in fact there seems scarcely any state from which recovery may not take place if the disease has not existed for a long period, and if we are able to withdraw all alcohol, and administer nourishment in large quantity.

There are a number of people whose nervous temperament displays itself in symptoms which are called in common parlance hysterical or hypochondriacal. While young they are termed hysterical, especially if they are women; when older they are known as hypochondriacs, and their nervousness then takes for the most part the form of depression and anxiety, or even suffering, on account of some fancied bodily disorder. Now, although hysteria is held by some to be peculiar to women, and discussions are raised as to whether the seat of it is in the womb or the ovaries, or elsewhere, it is, I think, a fact that there is the closest connection between these two neuroses; that hysteria may be converted into hypochondria; that the condition of many patients would be as well described by the one term as the other, and that the subjects of both the one and the other may be of either sex.

Few of these will be found to take an adequate supply of proper food, and those who take the least will present the most distressing symptoms of their disorder. The hypochondriacal direct their attention to the digestive organs more frequently than to any other region. They suffer from constipation, flatulence, and a host of other evils, and for this reason either shun food, or eat most unwholesome and extraordinary combinations irregularly or at long intervals. Hysterical women—I am not now speaking of young girls—are specially prone to eat irregularly; to take food, if possible, when unnoticed; to eat altogether a very inadequate quantity, and to eke it out by an inordinate proportion of stimulants. If we look at such, especially the hypochondriacal, their whole aspect betokens innutrition. Often they are miserably thin; if they are given to drink they may be fat, but their flabby tissues speak of low organization and defective power. It is evident that the nervous energy of such people is very low; this is manifested by their mental

depression and disturbance, and the defect must be supplied from some quarter or other. But whence can a supply of force come except from the material of food taken into the system by the alimentary organs? Moral measures are, it is said, and said truly, essential to the recovery of such persons. But moral measures constantly fail, because the bodily health does not allow of mental improvement, and is not *pari passu* attended to. As in more marked mental aberration no amount of argument, proof, or moral suasion will expel a delusion which vanishes of itself when the bodily health is renovated; so change of scene, of persons, and moral treatment of every kind, will fail with the hysterical or hypochondriacal so long as they try to live upon physic or alcohol, or upon a diet almost devoid of nutritive elements.

It may be objected that some hypochondriacal patients eat, not scantily, but enormously, taking more than is necessary for a person in health. Such are to be found, but in my experience they are the least to be pitied of their class. Though nervous about themselves, and prone to take notice of the slightest indication of anything they may think an ailment, they are not generally depressed or unhappy, but, after a fashion of their own, they exert themselves, and enjoy life. Such people, I believe, take this amount of food from a feeling that it is to them a necessity, and thus they keep at bay the graver nervous disorder which perpetually threatens them, and in the matter of alcoholic stimulants they rarely exceed. Food is to them a stimulus, and were it withdrawn they would speedily show signs of more serious mental mischief.

The only other subject on which I propose to say something is neuralgia. It is obvious that any observations upon it must be of the widest and most general character, and that no account can be taken of the special forms of this neurosis, or of any pathological changes connected with it. Believing with many others that neuralgia is one manifestation of impaired sensibility, as other neuroses may be displayed in mental symptoms, and in these alone, I think that the radical cure, and not the mere alleviation, is to be found in many cases in the supply of a large amount of nutriment to the nervous system. The confessed failure of drugs in the case of neuralgias, and the mere temporary

alleviation by such methods as hypodermic injection, inhalation, or a dose of alcohol, point to the necessity of some more general mode of treatment, which shall effect a greater change in the functions of the nervous organs. Those whose experience is greater than mine speak highly of the utility of fatty food, of cod-liver oil, cream, butter, and the like. Whatever the form of food specially indicated, it generally will be found that the entire amount requires to be increased, and that the quantity taken for a series of years has been deficient. It may be that the alimentary system of elderly persons will be found incapable of assimilating the requisite amount. On the intractable nature of the neuralgias of the aged, nothing need here be said.

With two remarks I will conclude. First, in all chronic forms of neurosis, alcoholic stimulants in any but the smallest quantity are a hindrance rather than a help—are productive of evil rather than of good. Secondly, in such disorders the fear, so commonly entertained both by doctors and patients, of “overloading the stomach,” producing “biliousness,” and the like, is in the majority of cases not realized when the plan of administering food in large quantity is tried. Great opposition will be offered by patients, and every kind of evasion attempted. They will swallow bottles of medicine far more willingly than they will eat sufficient meals at regular intervals. To induce them to do this is often a difficult task, and here moral handling is required. If this is judiciously applied to the patient and the patient's friends, some very remarkable results may be attained.

ON BLOOD-LETTING IN CERTAIN FORMS OF EYE-DISEASE.

BY ROBERT HAMILTON, F.R.C.S.

Surgeon to the Southern Hospital, Liverpool.

THE disuse into which the abstraction of blood has fallen of late years becomes more and more noticeable each year, and in this country it probably never was so seldom had recourse to as it is at the present time. It may almost be said to have passed out of the category of remedial agents at our disposal, so generally has it become the fashion to ignore it, notwithstanding the efforts of a few writers who still in the latest editions of their works continue to recommend its employment in certain circumstances.¹

It may therefore be doing good service if it can be shown that there are certain cases in which the abstraction of blood is not only a successful mode of treatment, but that there is not any other which can be substituted for it with equal benefit. Each of these points seemed to me were proven in the cases about to be related. The fact that they are all of one class, namely, affections of the visual apparatus, will not weaken the protest here made against blood-letting being set aside, because some of the parallel functional disturbances occurring elsewhere would be just as amenable to a like treatment. It is necessary to say, I make no attempt to revive the heroic blood-letting of our fathers' times; such an attempt would doubtless be futile, as experience has fully established the soundness of the present teaching of the schools, namely, a limited and almost rare recourse to blood-

¹ From inquiries made at several of the large dispensing houses in this town, I find that the demand for leeches has dwindled down to a mere tithe of what it was ten years ago. At most of the hospitals and dispensaries they are so rarely required, that they are not kept in stock at all, but sent for when ordered. As for cupping and bleeding from the arm, they are never heard of now.

letting. It is only to point out the mistake which will be made if it is altogether lost sight of or omitted from our therapeutics, that the following cases are recorded, with the thoughts they suggest. For the purpose of not wearying the reader, only those particulars are given in the history of each case which bear upon the treatment pursued.

CASE I.—A cook, aged 28, residing at Southport, exposed to great heat. For three weeks had suffered from constant headache, with pain in the ball of the right eye, the sight of the eye being much affected. Took purgatives, and applied cold bread poultices to the eye. Feeling no better, came to me, December 30th, 1869. I found she could with difficulty decipher No. 19 Jäger's types with the right eye, and only No. 10 with the left. The latter eye presented no external abnormal appearances, but the right had a slight patch of ecchymosis under the conjunctiva, upon the outer side, and the pupil was more dilated than that of the left. Ophthalmoscopic appearances: extreme vascularity of the optic disc of right eye, amounting to a redness, which appeared uniform with the adjoining choroid, and the vessels of the retina largely dilated. The treatment: four leeches to the right temple, a shade over the eyes, and an evaporating lotion to the forehead. She was also ordered to avoid the heat and glare of the fire. On the 6th of January the leeches were repeated. An improvement took place immediately after the first leeches were applied. Her expression was, that it seemed as if the bleeding lifted off a cloud from her eyes. At the end of a fortnight the pain in the head was gone, and the vision completely restored.

CASE II.—M. G—, aged 38, married, residing at Chester, consulted me on February 3d. Had good sight up to a fortnight previously, since then vision had rapidly failed, so that at the time of applying it was found she could not decipher No. 20 Jäger with the left eye, and No. 18 but indistinctly with the right. She had constant pain and weight in the head and temples, and sick feeling at the stomach. Her face and forehead were flushed, and tongue coated. Externally there was nothing observable about the eyes, beyond the pupils being somewhat dilated and immoveable. No suffusion, photophobia, or lachrymation. The ophthalmoscopic appearances were the same

in both eyes. The optic disc swollen, small extravasations of blood on the vessels of the retina, and hyperæmic condition of the latter. The treatment: four leeches to each temple, purgative medicine, and cooling lotion to the forehead. Upon her return at the end of a week there was marked improvement, and she stated that the relief given by the leeches had been immediate. She was told to continue the lotion, the low diet, and the medicine. During the following week, not finding the improvement in vision to be progressive, she applied six more leeches. At the end of a fortnight I saw her again; she was now able to read No. 2 of the types with either eye, the pupils acting much more freely, and the pain in the head was gone. I saw her for the last time on March 14th, when she was quite well, and sight completely restored.

CASE III.—J. R——, aged 25; steward. Eye-sight good up to Christmas 1867. At that time he was in Melbourne, having arrived out about four days before. He was standing on board a lighter, tallying some goods that were being removed from the ship. The weather was very hot; he turned faint and giddy, made an effort to get on board his ship, and in doing so fell down insensible, and remembers nothing more for an hour or so. He had been drinking rather heavily before the occurrence. When he came to he found his sight “gone a good deal.” Ten days after he had another fit, having continued to drink in the interval. His sight was more defective after this; he could not see to write or perform his duties. His face looked to himself in a looking-glass like a black shadow. Previous to this voyage his nose used to bleed frequently and freely; even the application of cold water to his face, in hot weather, made it bleed; but it had ceased to do so for some time. He arrived in Liverpool in May 1868, with no improvement in his eyesight, not having had any treatment all that time. He at once placed himself under the care of an ophthalmic surgeon, and continued under his care for a year and a half, during which time he had a seton in his neck for five months, the application of cold water to his head and temples, by placing his face under the tap three or four times a day, and various medicines.

I saw him for the first time in September 1869, when he stated there was little or no improvement in his sight. He had

never lost the pain and weight in his temples. He felt, if it was not for the pain, as if he could sleep all day long. His general health was good; he was stout and strong-looking. He had the amaurotic stare, with somewhat dilated and immoveable pupils. He could only make out here and there a letter of No. 20 Jäger with either eye. The ophthalmoscopic appearances may be described as complex in both eyes; for whilst the lower half of optic disc looked ill-defined and swollen, with the vessels proceeding from it enlarged, and extravasations dotted upon them, the upper margin of the disc stood clearly defined, and the arteries were pale and shrunken.

The treatment consisted of three leeches to each temple, repeated every ten days for six times; cupping on two occasions to the extent of about four ounces. The third application of the leeches removed to a great extent the pain in the head. On December 30th his condition was as follows: he had entirely lost the pain and weight in forehead; he felt lighter, and better, and much stronger than before the bleedings; he made out most of the words of No. 12 types. At the present time, April 12th, he keeps fully as well; is not able to decipher any smaller print than No. 12, though he does that now with greater ease.

In this case all the good that can be done by local bleedings has probably been effected, and the atrophic changes which have occurred in the optic nerve and in the retina, from the long-continued congestion interfering with nutrition, might only be aggravated by a persistence in such treatment.

Exposure to the glare and heat of the fire, to a more than ordinary degree, was the exciting cause in the first instance related. In the next a too free use of stimulants was, I believe, the cause. In both the functional disturbance, though differing in degree, was the same, namely, a temporary engorgement of the vessels of the part, paralysing nerve action; or to reverse the statement, the nerve action being paralysed by excessive heat, or exhausted by over-stimulation, led to a temporary engorgement of the vessels, and the result was defective vision and pain in the region affected. In the third case exposure to the intense heat of the sun, added to previous intemperance, produced an attack almost resembling sunstroke, which was followed by partial blindness, for which no treatment was adopted for months.

Structural changes necessarily ensued. The long-continued choking up, as it were, of the capillaries and small vessels interfered with the perfect nutrition of the optic nerve, and atrophy of a part of the nerve-fibres is the consequence.

The first two patients were cured because treated in an early stage, and not only were the causes removed, but the actual distention of the part was relieved, before its continued existence had entailed abnormal action in the optic disc, retina, or choroid.

The great value of such cases consists in this: that the *modus operandi* of a particular form of treatment can be traced in them. The process which is set up when blood is being abstracted from a part is probably something of the following nature. By suction the blood is drawn from the capillaries, venules, and arterioles in immediate proximity to the bite or opening made, so that these would be soon emptied of their contents did not the vessels of which they are the radicles keep up the supply, and these again are furnished from more remote and larger ones, and the latter from still more remote and larger vessels; so that, suction or depletion going on, the engorged part, though at some distance, is soon called upon to contribute its share towards making good the vacuum. Thus there is established, for the time, a current in a new and opposite direction to the normal one, in all the vessels affected by the suction. That is to say, from the moment the bleeding commenced to divert the current, to the time when the circulation is re-established, not only is there a suspension of their functions in these capillaries, venules, and arterioles, but it is not going beyond a fair inference to conclude, that the interval is occupied by the walls of those vessels which have been preternaturally distended in contracting and collapsing when their lessened contents enable them to do so. We have thus the following state of things induced by local bleeding: a reversal of the current from its normal course in the neighbourhood of the puncture, and the escape through the latter of the blood, and further on, the *vis a tergo* being withdrawn or diminished, a retrograde course of the blood occurs; it goes to swell the stream escaping from the puncture. As the blood continues to escape, the area in which this new action is set up becomes wider and deeper, and very soon involves the part where a disordered condition of things exists.

This may be the mode in which the engorgement is gradually removed, but another explanation is also very probable, namely, that the supply of blood to an engorged part ceasing, or at any rate being greatly diminished during the time that abstraction goes on, opportunity is afforded to the capillary walls and to the arterial and venous coats to remove their stagnant contents; over-pressure, in other words, no longer interferes with the performance of their functions, and as living tissues they at once resume their assigned action.

Among the difficulties in the way of these explanations, the following has been most frequently started. The larger trunks in the neighbourhood of the puncture, with which the smaller vessels communicate, would probably altogether supply blood to replace that abstracted, without interfering in the slightest with the current of the circulation a little distance off. The answer to this will be made more clear by considering the action set up by the bleeding in the three cases described, where an engorgement of the smaller branches of the ophthalmic artery, and of the intermediate capillaries, was presumed to exist. The leeches applied to the temple drew blood from the branches of the temporal artery, consequently from this vessel also, and from its parent stem, the external carotid. At the point of bifurcation of the common carotid into the external and internal, the stream of blood is so powerfully drawn into the external by the exhausting process going on, that instead of the same amount of blood entering the internal carotid, probably not half the usual quantity passes into it, as long as the depleting process in the temple is kept up. The result of this is that the ophthalmic artery, the first large branch of the internal carotid, quickly participates through all its ramifications in the lessened supply of blood. Following out the thought, we perceive that the ophthalmic vein, with all its contributories, would have obtained a diminished supply of blood in the cases related, had not there existed an overplus upon which it could draw, and so remove, whilst the current was in abeyance.

The more difficult question to answer is the next. How can the very temporary diminution of the supply, supposing the above explanation to be correct, followed, as it so soon is, by a return to the ordinary course of things, be productive of any

permanent change in the part? For answer, I would fall back upon the marvellous rapidity of absorption, and say that by its means the *vis mediatric naturæ* quickly works up the surplusage of raw material, and so readjusts the balance, if we aid and abet her by lessening, even for a short time, the supply, provided that it is merely a condition of excessive vascularity, and no great structural changes have occurred.

ON THE DIETETIC AND MEDICINAL USES OF WINES.

BY THE EDITOR AND STAFF.

PART I. ON THE PLACE OF WINES IN THE DIET OF ORDINARY LIFE.

(Continued from p. 296.)

IN our last paper we spoke of the natural *acidity* of wines chiefly from the point of view of indicating the limits within which the presence of this quality is not a mark of unwholesomeness in a beverage intended for healthy adults. It would be a serious omission, however, did we not show that the free acids, provided that they are present only in the several proportions which have been already indicated, are far more than merely harmless in their action.

It is a singular thing that while the tonic powers of mineral acids, as used in medicine, have obtained universal recognition, the no less remarkable tonic qualities of the vegetable acids which are essential ingredients of a variety of foods which we consume in ordinary life should have been so slightly dwelt upon: one can only ascribe the fact to the vicious conventional tradition which habitually separates the action of foods from that of medicines. The value of acetic acid has, indeed, been practically confessed in the popular use of vinegar as a so-called condiment; in plain language, a tonic to the function of primary digestion; and a more profound and important action of this substance on the organism is indicated by the empirical observation of numerous physicians and travelers, that vinegar is an antidote of no mean power to scurvy. An equally decided instinct to that which makes men crave for sour pickles, makes them crave also for sour fruits; and it is certain that a moderate use of these things powerfully aids

primary digestion, more especially in the condition of digestive languor which is apt to prevail during the height of summer weather. Moreover it is probable that malic and tartaric acids, which are the principal representatives of vegetable acid in natural wines, are able to exert a real influence on secondary assimilative processes, since, like acetic and most other vegetable acids, they are converted into carbonic acid in their transit through the body; and the same holds good of that further proportion of these acids which exists in wines under the form of *salts*. On the whole, however, it may be presumed that the useful functions of such quantities of free acids as are found in natural wines are limited to their tonic stimulant action upon stomach-digestion. And that this must be a powerful action no one will doubt who has systematically observed the effects of acid (but otherwise sound) wine in restoring appetite and digestion from the state of prostration in which they are often left after an acute illness.

4. Closely connected in the minds of most persons with *acidity* is the quality of *astringency*; and indeed the latter might be plausibly regarded as a branch of the former subject, since a vegetable acid, the *tannic*, is its chief cause. But, in the first place, the astringency of wines is essentially different from their mere acidity in its effects upon primary digestion; and secondly, there is the important physiological distinction between tannic and the other vegetable acids of wine, that it does not undergo conversion to carbonic acid within the body.

To say the truth, tannic acid, with its peculiar so-called astringency, is the real culprit in many cases where a natural red wine of low alcoholic strength is accused of "acidity." The impression of *roughness* on the tongue is easily confounded with actual sourness. Tannic acid in wines is almost exclusively the product of grape-skins and stones, not of grape-juice. And hence it is only in red wines that it exists in any high proportion; the maximum is found in *young* dark-coloured wines, for in process of time the tannin precipitates along with an albuminoid matter, which is a notable constituent of such wines, especially when they have been only partially fermented. The colouring matter also precipitates with the tannin, and hence an old port-wine becomes "tawny." If any one wants to know

what the astringent element of wine is, at its worst, he must taste some of the dark purple wines of the Valais, or of North Italy, quite new. Generally speaking, the tannin element of wine may be said to be neutral as regards its influence on persons in ordinary health. But there are wines to be met with, here and there, which when young contain enough tannin to set any ordinary teeth on edge, and to upset any ordinary digestion. We remember with horror such a liquor which we once drank at a roadside station in crossing the Simplon, and which produced the most violent diarrhoea. This wine, which was a very cheap sort, of a dark purple tint, rough-tasting, but not sour, had probably been fermented not only with the grape-skins and stones, but also with the fruit-stalks; and as it was very new there had been no time for the tannin to deposit.

On the other hand, the astringent qualities of red wines may become very valuable in certain morbid conditions. But this consideration does not come under our present subject; and we may take the opportunity, here, of remarking that a great many erroneous statements have been made in recommendation of the highly tannic wines for a daily drink, on account of their "bracing" qualities. It is only in certain limited conditions of *disease* that the tannic element of wine possesses any value: and it may be feared that doctors have inflicted much useless misery on unoffending persons, who were not ill, but merely delicate, by recommending them to drink repulsive liquids, which turn the tongue to leather, on account of an imaginary "robustness" of the latter. There is no need for this.

5. We pass now to the consideration of the *salts* of wines. The importance of the saline constituents of wine was recognized very early in the history of chemistry; in fact, the "tartar" of wine was regarded with almost mystic reverence by physicians and chemists from Paracelsus onward, and we see traces of this feeling even in the pages of a sceptical and, for the times, enlightened pamphlet published by "A Fellow of the College," in 1724, and entitled "The Juice of the Grape, or Wine preferable to Water." Modern physiological chemistry assures us that there is a sound basis for this belief in the importance of wine-salts. The combinations of alkalies (more especially of potash) with vegetable acids, which every natural wine contains, are of a

dietetic value not to be easily overrated ; and in the particular function of warding off *scurvy* and some allied diseases of malnutrition, they rise to the highest importance.

It has been already said that tartaric acid is a prominent ingredient in the majority of natural wines ; but it is not only present as a *free* acid, but largely also in combination, as acid tartrate of potash (cream of tartar), and to a smaller amount, as tartrate of lime. There are also chlorides of potassium and sodium, phosphate of lime, and traces of silica and magnesia, besides other occasional salts. The above is a list of the characteristic saline ingredients of wines.

Among these various saline ingredients there is none other so characteristic of natural and unadulterated wine as the acid tartrate of potash ; this is especially the case with the wines of Bordeaux. For instance, of four samples of Bordeaux wine already referred to in a previous paper, we find the total *ash* (left after evaporation, and incineration of the residue) amounted to 2.35, 2.08, 2.23, and 2.00 parts per thousand respectively ; of this total, 0.45, 0.66, 0.41, and 0.38 respectively, consisted of *carbonate* of potash, the representative of the *tartrate* in the wine. In Rhenish wines there is also much tartaric acid, but a larger proportion of it is in combination with lime than with potash. In port wines, when new, there is a high proportion of tartrates, which tend to deposit with age. But in sherries as sold, even when new, there is a remarkable deficiency of tartrates, which requires special comment, because it is not a natural feature of the wine, but a result of a special process of adulteration which is, unfortunately, universal. Sulphate of lime (in the shape of plaster of Paris) is employed in the manufacture of these wines, with a view to precipitate the tartaric acid and the albuminoid matters ; the result is strikingly manifest in the character of the ash left by the wine after evaporation and incineration. Of four sherries analysed the total ash was found to be as much as 4.50, 5.15, 5.50, and 5.13 per thousand parts respectively ; but of this large ash only 0.07, 0.10, 0.14, and 0.07 consisted of carbonate of potash, the representative of tartrate in the wine. That means, that the wine is by the “plastering” strongly impregnated with sulphate of potash, a serious evil, for sulphate of potash is a very depressing

salt, and its effects might materially interfere with the stimulant action of the wine, and doubtless does so, except in the case of the old bottled sherries, which have counterbalancing virtues of their own, to be presently noticed. It may be said, also, in general terms, that any attempt to rob a young wine of its tartaric acid and tartrates is a mistake of the most serious kind; for the presence of these substances really tends to keep the wine in good condition, and their premature removal decreases the chance of the liquor keeping well, not to mention that it abstracts a valuable nutritious ingredient for which, in its youth, the wine possesses no compensating advantage. It is to be feared that the same objectionable process of "plastering" is also followed in the case of several Greek wines, since it is difficult, otherwise, to account for the high percentage of sulphate of potash in the ash of these wines, and the low percentage of carbonates.

On the whole, we are inclined to believe that of all the saline ingredients of wine, the only ones which seriously influence the organism, and possess a real dietetic value, are the tartrates of potash and of lime, and possibly the phosphates of lime. In regard to the phosphates generally, there is one popular delusion much fostered by certain wine-dealers, and unfortunately abetted by some hasty and ill-considered statements of a chemist of European celebrity, that the presence of these salts gives to wine an exceptional value as a nervine tonic. In reality there is not the least support, in the facts either of physiological chemistry or of clinical medicine, for the theory that salts of phosphoric acid influence the nervous system except in the most indirect manner. It is true that phosphorus is a constituent of the nervous system, and it is probable that phosphates in the excretions are partly due to disintegration of nervous tissue, but there is no proof that phosphates, administered as such, will nourish the nervous tissues; and, on the other hand, there is a great deal of evidence tending to show that their action is limited to certain changes in the relative proportions of the alkaline constituents of the blood, and in the alkaline constituents of the wine. The phosphate of *lime* stands on a different footing from the other phosphates; and although the question of its functions within the body is far too elaborate to

be discussed here, there is some reason to think that even in small quantities, such as are present in lime, it may prove a valuable agent in assisting the processes of cell-growth in young tissues or in tissues that are undergoing rapid repair after disease or injury.

Upon a general review of the question of saline constituents of the various wines, there can be little doubt that, in this respect, the varieties which possess the highest merits are, successively, the wines of Bordeaux, Burgundy, the Rhine, and Hungary; that is to say, among natural wines, which must be the principal subject of our consideration in regard to the use of wines as a daily beverage.

6. We come now to what is by far the most difficult and obscure part of the discussion upon wines; the estimate, namely, of the value of their highly characteristic secondary elements, which are formed during the period of storage. The chemistry of the subject is only in its infancy, and so much of it as is already made out is by no means easy to explain in brief outline. But the difficulty of application of such chemical facts as are known to the practical selection of wines for dietetic purposes, is aggravated by the fact that the question becomes immediately complicated by secondary considerations. In dealing with those elements of wine which have already been discussed, the task was simple, for the very first of these topics—that of alcoholic strength—introduced considerations which showed that if wine is to be used as a beverage, both temperance and economy most strongly argue that the bulk of the community should limit themselves to the class of natural wines produced under such conditions as enable the cheaper varieties to be relied on as sound, wholesome, and palatable. We have now to deal with properties of wine which can only be legitimately developed by age and careful handling, and must, therefore, involve increased costliness; but which, when developed, have the most valuable effects, not merely in increasing delicacy of flavour,^f but in fitting the wine to supply, in a very important manner, certain special needs of life. We must, therefore, comparatively disregard questions of economy, and deal with wines from the point of view of a refined, yet not unwholesome luxury on the one hand, and of a cordial, for special emergencies, on the other. This greatly

widens the field which we have to survey, for without meddling with the strictly medicinal uses of wines at all, we are bound to examine the properties of a variety of wines (especially the *fortified* kinds), which, as beverages of daily life for healthy adults, we deliberately disapprove of, or set aside as too expensive for consumers whose income is but moderate.

These substances of secondary formation are the *compound ethers*, to which wine of a certain age owes the greater part of its flavour and bouquet, and which have a scarcely less important influence in heightening the quality of the liquor as a stimulant of vital functions. The first of these results is well recognized by connoisseurs, though the most accomplished amateurs are often singularly ignorant of some important features of wine flavour; the second is most perversely ignored or misunderstood by the majority of medical men in their capacity of instructors of the public.

When the primary process of fermentation of wine has been brought to a standstill, whether because there is no more sugar to be destroyed, or because there is no more available¹ ferment to carry on the process, there remain in the liquid two kinds of substances—alcohol and acid, or rather several alcohols and several acids, which must react upon each other, producing, more or less rapidly and completely, a substitution of compound ethers for the alcohol generated by the primary fermentation. The compound ethers are of two kinds, fixed and volatile, and there is a great difference between the importance of the two classes; according to Dr. Dupré, the fixed ethers have probably scarcely any value beyond the indirect one of neutralizing a part of the acid and facilitating the formation of volatile ethers.² It is the great merit of Dr. Dupré's investigations into the constitution of wines, that he has enabled us to take the first important steps in the appreciation of the relative proportions, as well as the relative merits, of these two classes of compound ethers, and has opened the way for a large amount of promising

¹ We say *available*, because the albuminoid substance may be only temporarily locked up by other natural constituents of the wine, or by alcohol artificially added.

² This is probably true from a chemical point of view, but is too absolute a statement, I think, if it be applied to physiological action.

inquiry into the more obscure questions as to the physiological action of wines.

If we glance down the tables already referred to, bearing in mind the explanatory directions which accompany them, we note the following capital facts as regards the ethers of the principal European wines. Among the natural wines we find the Hungarian predominant, on the average, in the important merit of excess of volatile over fixed ethers; but inferior to Rhine and Bordeaux wines in the total amount of ethers. Bordeaux comes next, on the average, in the excess of volatile over fixed ethers, but is somewhat inferior, on the average, to Rhine wine, in total ethers. One specimen of expensive hock (72s. per doz., vintage 1862) exceeds any single Bordeaux or Hungarian wine quoted, both in total ethers and in the excess of the volatile over the fixed; the general composition of this wine is typical of a high-class natural white wine, thoroughly fermented, and possessing all the best qualities of a bottled wine. It is interesting to contrast Greek wine with Hungarian in respect of the ethers; *e.g.*, in a white Hungarian at 34s. and a Greek at 36s. per dozen, from Dr. Dupré's tables, we observe that the total ethers are about equal, but that whereas in the Hungarian the volatile ethers are largely in excess of the fixed, in the Greek the relative proportions are reversed. The low proportion of volatile ethers in the three samples of Greek wine quoted in these tables must be considered a not unimportant defect; and we must here mention another fault of these wines which should have been referred to in our last paper, *viz.* the high proportion of volatile to fixed acids. We will also notify a further indictment of Dr. Dupré's against Greek wines, *viz.* that they frequently contain an appreciable amount of *aldehyde*, an oxide of alcohol, which, so far as known, is rarely or never present in any wine except when it is about to turn into vinegar. On the other hand, we are bound in fairness to mention that a very distinguished chemist, Dr. Williamson, has recently referred to the presence of aldehyde in these wines as a positive merit. Personally, we must disagree with this verdict, on the double ground that the flavour of aldehyde is, we think, extremely disagreeable, and that this substance is more likely, from what we know, to be injurious than useful as a physio-

logical agent. Without pretending to give a final judgment, or one intended to be universally applicable to Greek wines, we may certainly say, that supposing the analyses given in Dr. Dupré's tables to represent at all fairly the average composition of these wines, it would appear that as a class they are rich in promise rather than in performance as yet achieved: since the concurrence of the several peculiarities which have now been named points with much force to the conclusion that, from some reason, the capacity for keeping sound in bottle is defective. On the other hand, we must say that from a recent careful tasting of a number of these wines, we have recognized unmistakeable natural vinous quality of a high order in several which are quoted at moderate prices, and we are inclined to believe that as *medicinal* agents they will be found very valuable. We also rather believe that the defects in keeping power which seem to be indicated by the peculiarities above mentioned depend solely on imperfections in the present mode of manufacture, and we venture to doubt whether Dr. Dupré's anticipation that the climate of Greece will not admit of the perfection of wine-making is just. It would be a thousand pities if a country so rich in capacity for the production of full-bodied and rich-flavoured natural wines, with an alcoholic strength conveniently intermediate between the wines of France and Germany and the fortified liquors of Spain and Portugal, should prove unable to bring its products into the European markets in a state of perfect soundness. At any rate, there is no reason to believe that the experiment has been fairly tried as yet, and we may all hope that the same energy which has done so much to introduce Greek wines to general notice, will be successful in perfecting their preparation.

We turn now to the ethereal constituents of the fortified wines, taking port, sherry, madeira, and marsala as sufficient examples for practical purposes. We at once notice the fact that these wines, as a rule, only very slowly develop any considerable quantity of volatile ethers. From the quantity of alcohol and of acids present in the wine from the first, one would suppose that a large quantity both of fixed and volatile ethers must be formed, but, as a matter of fact, one finds in a port two years in bottle (price 32s.) only 0.430 per thousand

total ethers as against 0·415 per thousand in a thin 12s. claret of the same age ; and, on the other hand, the claret has altogether the advantage as regards *volatile* ethers, which it contains in the proportion of 0·235 to 0·180 fixed, while the port has 0·302 fixed and only 0·128 volatile per thousand. The dosing with alcohol which port undergoes, not merely arrests the primary fermentation processes, but delays indefinitely the vitally important processes of etherification. Even so old and, in many respects, splendid a wine as the port of 1851 does not contain quite so much volatile as fixed ether, though the total amount of ethers is high. The wine of 1842, on the other hand, yields a very high total percentage of ethers, of which a rather larger part is volatile than fixed. This is a magnificent wine as regards every item of its composition, and where it has been judiciously kept is still in first-rate order. The alcoholic strength is only 18 per cent., and there are but 130 grains of sugar to the bottle ; the wine also still contains a high proportion of tartrates, as is evident from the ash. The wine of 1851 is yet more moderate in alcoholic strength (15 per cent.), contains also a high proportion of tartrates, but has the advantage, or disadvantage, according as we take it, of containing more sugar, viz. 235 grains to the bottle—quite enough to make this delicious drink a gout-provoker for predisposed persons ; indeed even the '42 wine will sometimes act in that way.

One has been accustomed, of late years, to hear port-wine abused with indiscriminate vehemence, and there can be little doubt that in its young and rough state it is a barbarous drink, however much its most objectionable features may be disguised by the presence of sugar and spirit. Put aside the question of expense, however, and it is simply dishonest to deny that port-wine can be procured which represents nearly all the elements of a fine wine at their best ; and for certain special purposes to be named presently it is as singularly useful, as it is undoubtedly agreeable to a refined palate.

Marsala, which is easily and cheaply procured in sound condition, is a really fine wine in many ways. A very old wine of this sort was found to contain a high total percentage of ether, of which, however, the fixed were still in excess of the volatile. Marsala is free from the defects of "plastered" wines.

The case of sherry is singular among fortified wines, and affords a good instance of the way in which a popular cry confounds things which are utterly distinct in one condemnation. At the present moment there are hundreds of persons who imagine that all sherry is, from first to last, a coarse sophisticated drink, of the same general character and strength as port, and like it to be utterly repudiated by reformers in wine. Doubtless sherry has the fault of being universally fortified; and it is also mischievously affected by the "plastering" already mentioned. But on the other hand it is remarkable that in sherries, from an early period, a high proportion of volatile ethers is developed; and an expensive bottled sherry of the 1857 vintage mentioned in Dupr 's tables presents about the highest development of this quality which it is possible to find in any wine. There is no reason, then, that even a young sherry (two years in bottle), if genuine, should not present the most important characteristics of a well-made wine; while, as regards the older specimens, analysis fully confirms the opinion which, personally, we have long entertained—that of all the strong wines there is none to compare, either in generous character, or in delicacy of flavour, with a really fine old bottled sherry. We shall revert to this point when we speak of the employment of the stronger wines in the treatment of disease; at present we must introduce some remarks on the special dietetic uses to which the more potent wines are particularly adapted.

And first, as regards the infancy of delicate children. Of all the subjects on which conventional morality has talked pernicious nonsense, there is none upon which, in a small way, it has done more decided mischief. The worthy teetotallers have easily enlisted the sympathies of persons whose experience of the management of children was limited, when they have declaimed against the practice of "rearing drunkards from the cradle," &c. &c.; and it is, of course, quite possible to do even so dreadful a thing as this. But the judicious use of wine as a part of the diet even of quite young children (of course always under medical sanction) is entirely free from such dangers, and, on the other hand, may do positive good of a very visible kind. The cases in which it is useful (we are now talking of children not absolutely diseased) are, (1) those where a tendency to

wasting is very marked,—*i. e.* where children are very apt, without positively seeming ill, to run down suddenly in flesh, with or without simultaneous failure of appetite; and (2) those where trifling catarrhal affections are very easily caught, and very slowly shaken off. We are firmly convinced that multitudes of such children have been allowed to slide into confirmed ill-health, and then into organic disease, who would have done perfectly well had such symptoms as the above been attended to by the administration of wine. Now the right way to deal with children about wine is precisely the reverse of the plan which is appropriate for adults. The latter should be advised to take wine only with their meals, and the problem, therefore, is to find for them a light natural wine which may safely be used as a beverage. With children, on the contrary, it is much better to give wine at separate hours, as if it were strictly a medicine; and the potent wines, disguised and made somewhat disagreeable by the addition of bitters, are much the best: for example, a teaspoonful of sherry or port made up to a tablespoonful with strong infusion of gentian, which might be given three times a day to a child of three or four years old; or even double this quantity may sometimes be advantageously given. But the point which we wish to dwell on more particularly here is the superiority of sherries to all except the most *recherche* kinds of port for this kind of purpose. The improvement of appetite and nutrition, which is sometimes marvellous in young children who have been put on an allowance of wine, is never observed in so striking a degree as after the administration of wine containing a high proportion of volatile ethers. Even a common 30s. sherry, such as any respectable wine merchant will supply, is more highly gifted in this particular respect than any port which is within the reach of ordinary purchasers. It is therefore a point of much consequence that in prescribing wine as supplementary food for children whose parents are not wealthy we should recommend sherry rather than port. Sherry is also markedly superior to marsala for this purpose.

Used under the precautions above given, not merely is there no danger of wine corrupting children's tastes, but the services it renders to health are more important than those of any medicine with which we are acquainted; indeed, it is just in the cases where

medicines would disorder the stomach and aggravate the child's *malaise* that wine plays the most remarkable dietetic rôle.

As a dietetic aid in the debility of old age the more potent wines are even more remarkably useful than in infancy and childhood. More particularly in the condition of sleeplessness, attended often with slow and inefficient digestion, and a tendency to stomach cramps, a generous and potent wine is often of great value. It is not desirable for such persons to include a large allowance of fluid in their daily diet, and their alcohol may well be taken in the more concentrated forms. Moreover the fine volatile ethers which develop in well-kept old bottled port and sherry have an extraordinary influence in heightening the stimulant and tonic influence of alcohol. But in this category sherry is to be reckoned as a much more convenient agent than port, because we are able to get the specific effects of the volatile ethers at a much more reasonable price in the case of the former than of the latter wine.

One very important effect of the highly etherized wines, which are at the same time of rather high alcoholic strength, is their power to produce tranquil and prolonged sleep in aged persons. Supposing that we allow an aged person eight ounces (four glasses) of sound sherry for total daily alcoholic allowance, then we shall afford him the maximum of comfort by ordering that half this quantity shall be taken, with some light food, at his supper hour. Considering how simple a prescription this is, it is surprising how often its value is ignored by medical men, though the popular custom of a "night-cap" of toddy for old people, even when they have been little accustomed to alcohol in their younger days, shows the existence of a need for some agent of this kind. Plain alcohol is, however, a much less efficient hypnotic, unless taken in objectionable quantities, than the highly etherized wines; and no spirit, except the finest and most expensive old cognac or rum, approaches good sherry in this kind of value. In all probability it is precisely the ethereal constituents of such old bottled spirits which give them their hypnotic and calmative power over the nervous systems of the aged.

We here conclude what we had to say about the dietetic use of wines by healthy persons. It was never our intention to

dwelt in detail upon the merits and demerits of individual wines, except as they fall into main groups which illustrate leading dietetic rules. It was our object to lay down certain great principles which ought to govern the selection of wines for daily use, and especially to show how wine might be made the wholesome beverage of ordinary life rather than a dangerously seductive luxury, leading easily to mischievous excess. We have purposely abstained from dwelling upon such wines as fall merely within the category of luxuries for occasional indulgence; but some of them, which are either too expensive, or in other ways objectionable for daily consumption, will find an important place in the remarks which we shall have to make in Part II. of these papers, on the use of wines in disease. For the present we may be content with the following summary of the points we desire to insist upon :—

1. Wines for daily use by healthy adults should not, on the average, contain more than 10 per cent. absolute alcohol; 8 or 9 per cent. is better.

2. If wine be used as the daily drink, it is best, as far as may be, to use only one kind at a time, and no other form of alcoholic liquid.

3. Sound natural wines are to be obtained at the best economic advantage from the Bordeaux district; the red wines are to be preferred.

4. Rhine wines (white) are equally excellent, but more expensive.¹

5. Hungarian wines are also, in many instances, excellent, but are at present too dear for daily use except by the rich. They are also unequal in quality, owing to defects of manufacture.

6. Greek wines labour under the same defects; the latter, especially, in an aggravated degree.

7. The fortified wines, as a class, develop no proper vinous qualities till they have been some years in bottle. Sherry, however, is greatly superior to the other wines of this class, in the rapidity with which it develops the volatile ethers.

¹ In a former article we stated that a German ordinary wine, equal to the ordinary Bordeaux which can be procured in London at 12s. a dozen, would cost twice as much. We have since been assured that this is exaggerated; and that a good ordinary Rhine wine can now be had for 18s. per dozen.

8. Fortified wines in small quantities, especially sherry, for the reason just named, are the appropriate stimuli of certain kinds of infantile and youthful debility, and of the enfeebled nervous system of old persons.

Finally, we may add a few words in correction of a statement which occurs in a former paper, and which, by ambiguity of phraseology, has led to misunderstanding and consequent cavil. We did not intend, when recommending the "hard-working student" to allow himself a bottle per diem of weak Bordeaux wine, to give that recommendation to young lads. We were thinking of "hard-working students" of middle age; and we would state our very firm conviction, that for youths (say under 25) whose bodily frame is as yet not fully consolidated, the proper rule is, *either no alcohol or very little indeed*.

From the time of puberty onwards, there arises a much greater susceptibility to the injurious influences of alcohol upon the emotions and the character; and between the date of puberty and the age of 25, or even 30, it would be better, in ordinary cases, either to abstain altogether, or to limit the allowance to one-third or one-half the amount above named. Still, there can be no question that to many rapidly-growing lads an amount of alcohol (preferably as beer) strictly limited to these latter quantities is not only harmless but most actively useful.

Reviews.

Public Health: a Popular Introduction to Sanitary Science; being a History of the Prevalent and Fatal Diseases of the English Population from the Earliest Times to the End of the Eighteenth Century. By WILLIAM A. GUY, M.B. Cantab., F.R.S., &c. &c., Professor of Forensic Medicine and Hygiene in King's College. London: Renshaw, 1870.

WE welcome very heartily this small treatise from the hand of one who is a veteran in sanitary science. Dr. Guy belongs to the select class of citizens who deserve well of the republic, but whose modest labours the republic scarcely hears anything about; and there are probably few persons who remember that twenty-five years ago he had already engaged in some of the most useful sanitary inquiries that have ever been made, and, indeed, contributed not a little to the formation of the modern school of hygienic research.

On the present occasion Dr. Guy has undertaken a task which some persons may think easier and less irksome, but which we believe to be far more difficult and troublesome to a conscientious person, than the conduct of the driest and most severely scientific research would be. Those who think it a small thing to write popular treatises on hygiene are so far right, that it is indeed very easy for a mere dabbler in science to do so. But to a man of real information and scientific spirit, the task is by no means light, for he feels acutely the danger of misleading the public on matters of such high importance. He knows that it is much easier to draw striking pictures which will produce a powerful effect on the reader, than to impress on the minds of unscientific persons the necessity for caution and suspense of judgment where our information is still incomplete.

In presence of these difficulties Dr. Guy has, perhaps, taken the course which was safest and best. Called to deliver the first course of lectures from the newly-established Chair of Hygiene at King's College, he has been content to spend one season in laying down what may be called the historical foundations of the science. He has given us a continuous history of the epidemic diseases which desolated England, and the remedies, at first feeble and ill-devised, and only gradually assuming distinct

shape and guiding principles, from the earliest times down to those later years of the eighteenth century which were distinguished by the splendid sanitary labours of John Howard the philanthropist, of Sir Gilbert Blane, Sir George Baker, and many other eminent men, the series being closed by the illustrious Jenner, who commenced his vaccination experiments in 1795. We are sometimes apt to think and speak of hygiene as if everything which has been gained in this department were a thing of but a very few years' growth, and no doubt it is only of late years that a body of scientific teaching on these subjects has existed; but it is extremely interesting to observe, in perusing Dr. Guy's pages, that the very same qualities which are now universally recognized as necessary to the philosophic sanitarian were exactly those which distinguished those great men to whom we owe the unspeakable benefits of a power to grapple with such fearful national curses as the scurvy, the jail-fever, and the small-pox at one time were.

Dr. Guy has a natural aptitude for effective numerical statements, and a power of summing up the successive results of sanitary science in successive periods of history which makes his narrative at once interesting and convincing. He has well fulfilled the task of describing the miseries of the times when hygiene did not exist at all: and he has given an interesting picture of the dawn of the science. We trust that on the occasion of his next official course he will carry us down to the researches of the present day, and give us the benefit of his forecast as to the main direction which the future achievements of sanitary science must take.

Lectures on some Subjects connected with Practical Pathology and Surgery. By HENRY LEE, F.R.C.S. Surgeon to St. George's Hospital, &c. &c. In 2 vols. Third Edition. London: Churchill, 1870.

THESE volumes contain the substance of the second editions of two separate volumes of lectures previously published, together with several new ones, and they now form a valuable body of teaching on a large proportion of the subjects included in practical surgical pathology. It is quite unnecessary for us to describe Mr. Lee's characteristic abilities, either as a scientific investigator or as a writer; and upon most of the topics which are treated of in these volumes his opinions are well known. There are, however, sundry novelties in the shape of arguments on recent theories which touch some of Mr. Lee's favourite subjects: and of course the subject of syphilis is treated with greater fulness of detail than ever. It is in regard to syphilis, indeed, that the author's characteristics come out most plainly: on the one hand, his immense energy, industry, and quick per-

ception ; and on the other hand something which must be termed, we do not mean it at all invidiously, a spirit of partisanship. It is a curious and really rather melancholy fact, that a plain man, looking for safe guidance upon any of the more doubtful questions in the pathology of syphilis, has very soon to learn that scarcely one of the syphilographers, however conscientious, is really quite a safe guide to an estimate of the real positive knowledge which science so far possesses. Mr. Lee is transparently straightforward in intention ; yet it seems to us impossible to doubt that his anxiety to demonstrate the inoculability of constitutional syphilis has led him to force into the service of his argument facts which will scarcely bear the strain which he puts upon them. To take one example, on a subject with which we are personally more familiar than with most of the subjects dealt with in these volumes, we must remark that Mr. Lee's dealing with the question of so-called vaccino-syphilis appears to us to display this tendency unconsciously to make the most of evidence for vaccino-syphilitic inoculation because that very evidence would strongly support the general theory of the communicability of syphilis by the blood. With regard to the Rivalta cases we have already expressed our opinion in another place, and we confess that after refreshing our memory with Mr. Lee's own statement of this affair we are more than ever persuaded that the panic which grew out of that incident would never have obtained more than a momentary importance had not these unfortunate occurrences been seized upon as a new battle-field for the conflicting schools of syphilography.

However, we have no wish to speak in any terms but those of high praise of the general character of Mr. Lee's work, which is highly practicable and valuable. We are glad to observe that he has very sensibly so arranged the matter of the two volumes, as to allow of their being sold separately to persons who do not want to buy both. This will be a great convenience for many persons who would hesitate to purchase two large octavo volumes, but might be very anxious, for instance, to possess the volume on Venereal Diseases.

On Hernial and other Tumours of the Groin and its Neighbourhood, with Practical Remarks on the radical Cure of Ruptures.

By CARSTEN HOLTHOUSE, F.R.C.S., Surgeon to the Westminster Hospital, and Lecturer on Surgery to the Hospital School, &c., &c. London : Churchill, 1870.

THIS unpretending volume belongs to a useful class of works, which we may expect and hope to see multiplied. It is a monograph of an essentially practical nature, the subject being discussed from a clinical point of view in the form of a narrative

of actual cases, and as such it appears well fitted to give advanced students and country practitioners, to whom the question of hernia and the tumours which resemble it is of vital importance, a sound acquaintance with everything that they need to know of the matter. We have been much struck with the extensive and well-assorted series of cases, most of them from the author's own practice, with which the volume is filled; and so far as we can judge, the method adopted by the author appears calculated materially to simplify the study of a subject which to us in our student days appeared very difficult, and beset with obscurities that were not a little due to a profuse and unnecessary display of technicalities in the classical treatises upon it. We should have heartily welcomed the present volume in those days, and we have now much pleasure in recommending it to those who are about to commence surgical or general practice.

Lectures on Surgical Pathology, delivered at the Royal College of Surgeons of England. By JAMES PAGET, F.R.S., D.C.L. Oxon., &c. &c. Third Edition. Revised and edited by WILLIAM TURNER, M.B. Lond., Professor of Anatomy in the University of Edinburgh. London: Longmans, 1870.

It would be very superfluous for us to say many words in calling the attention of the profession to this new edition of Mr. Paget's great work on surgical pathology. Its author has been singularly fortunate in securing the assistance (for this and the previous edition) of so able a *collaborateur* as Mr. Turner, and English surgery may point with pride to the present volume as one unsurpassed, if it is at all equalled in the surgical literature of the world, for breadth of views and philosophic grasp of its subject. It does not fall within the proper scope of this journal to review a purely pathological work, and we shall therefore merely allude to one feature of the new edition which is of universal interest, namely, the chapters on inflammation. The reader will find them an extremely interesting discussion of the more recent views, including the doctrine of migration. Messrs. Paget and Turner, while admitting the general fact of the "migration" of corpuscles, are disposed to assign this phenomenon a much more limited rôle in the production of inflammation than is claimed for it by Cohnheim. This opinion is in accordance with the recent and very elaborate researches of Stricker, and also, we believe, with those of Augustus Waller, to whom belongs the real credit of first observing the migration, several years before Cohnheim made any researches on the subject.

Clinic of the Month.

Therapeutical Use of Arsenic in Phthisis.—The very favourable results which Dr. Montard-Martin had derived from arsenic in the treatment of tuberculosis have led M. Nonat to try the substance in a large number of cases. He has administered the remedy under the form of arsenious acid, and in doses of about one-seventieth of a grain to begin with in pills. This dose was gradually increased every eight days by one-seventieth of a grain, till the dose of one-twenty-eighth of a grain was reached per diem. In these proportions the medicament has afforded him good results in cases where tuberculosis had attained only the first or second stage, and presented no intestinal complication; for when vomiting and diarrhoea have set in, arsenic must be at once discarded. When phthisis is incipient, and when it is well circumscribed, M. Nonat has seen arsenic increase the appetite and strength of the patients; they gain flesh, look much better, and feel stronger and more cheerful. In such cases the medicament does not increase the pulmonary congestion, and indeed is attended by no inconvenience. The only counter-indication lies in the alimentary canal. In many subjects, however, placed in the above conditions, arsenic, if it did no harm, failed to produce any benefit. (See *Lancet*, March 26, 1870.)

Induction of Premature Labour.—Dr. Skinner furnishes the details of two cases, in which, instead of adopting the old method of puncturing the membranes, premature labour was several times successfully induced by the application of the water-douche, as recommended by Dr. Tyler Smith. The following is one of these cases:—Mrs. R——, wife of a labouring man, had been four times delivered at full term, her life on each occasion being placed in considerable danger, and the child still-born from protracted labour. Before she came under Dr. Skinner's care, it had been determined at the fifth pregnancy that she must be delivered at the seventh month, the difficulty in her case being a generally contracted pelvis. Accordingly, when the time arrived, a quantity of warm water was thrown up in the evening, the long tube of an ordinary stomach pump having previously been passed about an inch and a half within the os uteri. Finding in a few minutes that the water did not

cause any constitutional excitement, he passed the tube gradually a little higher, with a view of partially detaching the membranes from the uterus by the water. He continued to throw up the water for nearly ten minutes. In the morning he found the os slightly dilating, the head presenting high up. Pains came on then pretty rapidly, and when the os became fully dilated, as the head did not descend, he ruptured the membranes; a living male child being born very shortly, about eighteen hours after the application of the douche. (See *Lancet*, March 26, 1870.)

Popliteal Aneurism treated by Pressure.—A case is recorded by Mr. Chiappini as being under the care of Dr. Keith, in which an aneurismal tumour, that in the course of four months had attained the size of a hen's egg, was subjected to this mode of treatment at the Aberdeen Infirmary. The pressure was applied by means of a Carte's tourniquet over the femoral artery in Scarpa's triangle, the compression being shifted up and down the thigh when it became painful. After this treatment had been continued for twenty-one hours the track of the vessel became exceedingly tender, and digital pressure, conducted by relays of students, was substituted for the tourniquet. After thirty-seven hours' compression all pulsation in the aneurism had completely stopped; slight pressure was, however, maintained for forty hours longer, by which time the internal articular branches of the popliteal artery had increased to the size of the radial. No change of temperature occurred at any time in the affected limb. Three or four days afterwards the tumour was perfectly solid, and the patient was in every way doing well. (See *British Medical Journal*, April 2, 1870.)

Therapeutic Uses of Chloral.—A considerable number of communications have appeared in the different journals on the value of this remedy, of which we shall here briefly give excerpts. Dr. Monckton, of Maidstone, gives the details of one case in which, hernia having been some months previously present and reduced, symptoms of strangulation of the intestine occurred; there was a hard globular painful tumour between the internal abdominal ring and the umbilicus on the left side, with vomiting, pain, and distention of the belly. Chlorodyne failed to give relief, but 45 grains of hydrate of chloral at one dose procured sleep, and a relapse having supervened, accompanied by stercoraceous vomiting, 50 grains of chloral every night soon effected a satisfactory resolution of the intestinal difficulty, and within a fortnight the old man had fairly recovered. A second case by the same observer showed the efficacy of the drug where dyspnoea, tumultuous action of the heart without bruit, feeble and very irregular pulse, with some cough and expectoration, were the principal symptoms. Its beneficial effects were well

marked also in a case of phthisis with night cough and nervous insomnia, in which it was administered in 30-minim doses. Mr. Denton, of Maidstone, relates a case of traumatic tetanus, resulting from a fall from a cart, in which marked symptoms existed. Here the bowels were first relieved by a brisk purge. Morphia, nepenthe, and chloroform were given without effect for five days, and chloral was then substituted, and repeated doses were given till sleep was procured, which at first lasted but a few hours. Ice was applied to the spine for the first few days, and subsequently a liniment of belladonna and chloroform, with a poultice to the injured part. At a later period, scruple doses of bromide of potassium were prescribed, and then bromide of iron, with 5-grain doses of hydrate of chloral, and the lad made a good recovery. Mr. G. S. Brady, of Maidstone, records cases showing the advantages to be anticipated from its use in irritable bladder and urethra, complicated with retroverted uterus; whilst in another case it proved of great service in warding off sudden dyspnoea with violent pain in an old man of seventy; and lastly, it was successful in relieving pain and constant vomiting occurring in a patient who had suffered for many years from chronic ovarian disease, with recurrent attacks of inflammation. All the above-mentioned writers agree that it allays nervous excitement and produces sleep without the occurrence of any subsequent ill effects, as vomiting, nausea, headache, or depression. (See *British Medical Journal*, April 2, 1870.)

Treatment of Perforations of the Membrana Tympani.—

Dr. Dalby contributes an interesting paper on this subject, in which he adopts and recommends the treatment suggested by Mr. Hinton, of Guy's Hospital. He observes that the mere existence of the perforation is not the cause of the deafness, but that this is to be found in the disease of the middle ear which occasioned the perforation, and which still remains. The principle of treatment, as laid down by Mr. Hinton, is to remove entirely the morbid secretions accumulated within the tympanum, and to keep the cavity cleansed; for when the tympanum becomes congested, the swelling of its mucous lining soon closes the Eustachian tube, and its secretion having no other exit than through the membrane, perforations are continually kept open, or after closing, are re-opened by the pressure of discharge within. In Dr. Dalby's cases, when the ears had been well cleansed by an ordinary syringe, a syringe was used with a nozzle which fitted the meatus, and was defended by a piece of india-rubber tubing. In this way alkaline solutions were sent through the tympanum and Eustachian tube, passing out through the nose. This was done once or twice a week. After a time astringent solutions were substituted for the alkaline, five grains of sulphate of zinc to

the ounce of water being the one generally employed. By the adoption of this plan considerable accumulations of secretion are often removed from the tympana and Eustachian tubes, and masses of secretion are expelled which have evidently been in the Eustachian tube for some time, and have formed almost casts of the part where they have been lying. The tympana were regularly inflated on Pollitzer's plan, and astringent lotions containing a little opium were poured into the meatus at night. (See *Lancet*, April 23, 1870.)

Improved Method of Extraction of Cataract.—Dr. Taylor, of Nottingham, describes a new method of performing this operation, for which he has invented a special form of knife. The instruments he employs are a pair of sharp forceps that pierce the sclerotic, a very light speculum, and two knives a line in width and bent at an angle (similar to the ordinary iridectomy knife), one with a sharp point, the other with a blunt or bulbous extremity. As the danger in his mode of operating, even if vomiting occurs, is slight, he employs chloroform. The lids should then be separated with the speculum, and the globe seized with forceps at about the junction of the upper with the middle third of the cornea. The pointed knife is then entered in the corneo-sclerotic junction one or two lines from the forceps, at the summit of the cornea, pushed well into the anterior chamber, and carried along the summit a distance of six or seven lines. If it be desirable to associate an iridectomy with the extraction, a portion of iris may now be excised. If the cataract be over-mature, or if there be a tough capsule, the lens may be extracted without opening the latter. If not, it should be carefully lacerated in the central and lower segments, and the operation completed in the usual way. When there is little or no danger of inflammatory complication, or other contra-indication, and the patient has prominent globes, the iridectomy need not be performed, and the cataract can then be removed by extending the incision down the side of the cornea with the blunt-pointed knife, so as to form a lateral flap. This is very favourably situated for subsequent manipulation, and in this way the greatest success may be obtained, the patient retaining a central and moveable pupil. (*Ibid.*)

Hydrate of Chloral in Cancer.—Mr. Weeden Cooke states that he has recently tested the hypnotic value of chloral in this disease as compared with opium and other remedies, administered either by the mouth, by the rectum, or hypodermically, and finds the results obtained in the cases in which he has employed it so charming and so persistent that, fortified by the published experience of others, he feels bound to add his in confirmation of the excellent results obtained from its judicious use. He

reports eight cases, three of which were epithelioma, and two of uterine cancer, in which great relief was experienced. He adopted the mode of administration recommended by Mr. Squire, namely, the addition of syrup of tolu and peppermint water. Another writer in the same journal, Dr. Rattray, recommends, as the best mode of exhibiting the hydrate of chloral, to mingle it with an equal quantity of glycerine (5ss), and add sufficient water. (See *Lancet*, April 30, 1870.)

Atropine Poisoning from Hypodermic Injection.—The following case affords a caution against using hypodermic injections of powerful drugs rashly, and without experience of their strength. M. Stocks states that, having had an attack of lumbago for ten days or a fortnight, he determined to try the effect of hypodermic injection, and got a medical friend to give him six minims of a solution of atropine, which he had frequently used in his own practice, containing one grain of the alkaloid to two drachms of water. From this he obtained very satisfactory relief for a day or two. The pain recurring, he again had recourse to his friend, who injected a dose of his own solution, containing a precisely equal quantity of atropine, which he had obtained from a different druggist. This was injected at 9.30 P.M. In less than five minutes M. Stocks became aware that he had an overdose; his heart began to labour heavily, and to his feelings roughly, at the rate of about fifty per minute, accompanied by a sore feeling immediately over the base of the heart. This continued about ten minutes, and was immediately followed by intense thirst, dryness of the mouth and throat, with great perversion of sensation, everything tasting intensely acid. The skin of the whole body began to feel tinged and swollen, and in about an hour and a half was covered with a rash precisely similar to that of scarlet fever. There was also diplopia; during the evening he was completely unable to read the newspaper. Next morning there was power to read with one eye at once, and in the evening the disturbance of vision had entirely gone, as well as all other signs of the action of the drug. [It would have been interesting to have ascertained the condition of the arterial circulation in the eyes, when M. Stocks was under the full influence of the drug. The occurrence of the rash is of much interest. Was it not due to local paralysis of the sympathetic?] (See *British Med. Journal*, May 14, 1870.)

Extracts from British and Foreign Journals.

Treatment of Scarlet Fever.—A curious prescription is given by Mr. Kerr, of Canada West, for scarlet fever, which he states has been the result of numerous trials. It is composed of the powdered leaves of *Stramonium*, *Dulcamara*, *Sium lineare*, *Cicuta maculata*, and *Conio-selinum Canadense*, together with digitalis, squills, or anhydrous bisulphite of soda—digitalis or squills being in the proportion of a half part, bisulphite of soda in the proportion of two parts, the others in that of one each. To suit differences of age, of constitution, and of the prevailing epidemic, three combinations are formed out of these: one containing digitalis and the five ingredients which precede it; this is the first, and is generally best adapted for adults; a second, with squills substituted for digitalis, is generally best adapted for infants and children; and a third, with bisulphite of soda taking the place of digitalis or squills, is adapted to all ages. When to the above five remedies opium is added, it constitutes an effective medicine against dysentery. Mr. Kerr states that the medicine here recommended is founded upon the principle that power is gained by combination, each ingredient apparently possessing some property not contained in the others, the combined effect of these properties being necessary to combat the disease. Numerous trials were made, at first with henbane and camphor, and afterwards with various combinations of the different narcotics of the *Materia Medica*. This investigation comprised an examination of thirty-two plants, or their products, and extended over five or six years. (*Edinburgh Med. and Surg. Journal*, Jan. 1870.)

Iodide of Silver in Hooping-Cough.—Dr. Bartlett writes to the effect that he has used this remedy in hooping-cough for twenty-five years, without ever having observed it to fail in decidedly controlling the frequency and violence of the paroxysms within a week, and often within a few days, after commencing its use. It appears to have been originally recommended by Dr. Patterson in 1843. It is prepared by decomposing nitrate of silver by iodide of potassium, washing the yellow precipitate which falls, and drying. It is best administered to children by mixing it with white sugar, so that one grain will contain one-eighth of a grain of the remedy, or as in the following prescrip-

tion:—Iodide of silver, 10 grains ; white sugar, 70 grains ; gum tragacanth, 10 grains ; moisten with a drop or two of water and make into eighty pills, each of which will contain one-eighth of a grain of the salt. To a child of two or three years old one pill may be given, immediately before or after meals, from three to five times a day. Dr. Bartlett does not claim for the remedy that it will cut the disease short in one day, or even in two or three, but he observes, if any one will try its effects on two children simultaneously affected in the same family, a week will satisfy him of its efficacy. The iodide requires no watching, is readily taken by the youngest children, and does not interfere with the digestive functions. It is alike safe, pleasant, and effective. (*American Practitioner*, vol. i. No. 2, 1870.)

Treatment of Diarrhœa in Children.—M. Heller recommends the nitrate of bismuth in doses of half-a-drachm to one drachm in the diarrhœa of infants. At the outset this may be repeated every hour, till the looseness of the bowels ceases, which usually happens within twenty-four hours. No ill consequences ever result from its employment. (*Deutsches Archiv f. klin. Med.*, Band vi. p. 107.)

The Treatment of the Nervous Form of Dysmenorrhœa.—According to M. Siredey, the treatment of dysmenorrhœa varies essentially with the cause; it should also be modified to meet the conditions present in the period of the crisis, and those occurring in the intervals. In the nervous form, at the menstrual period, there is severe pain, and the object is to calm nervous irritation. Here, therefore, narcotics, antispasmodics, and even anæsthetics, are indicated. In the intervals of the catamenial period in the nervous form of the disease, especially if associated with chlorosis, full diet, tonics, and country air and exercise should be prescribed; but if with a nervous diathesis, antispasmodics, valerian, asafetida, ammoniacum, oxide of zinc, are appropriate. If the patient be very excitable, cold baths and a judicious application of the hydropathic plan of treatment generally should be adopted; and when the catamenial period supervenes, local application of opium, belladonna with or without chloroform, and injections of valerian or asafetida are useful. During the period absolute rest should be enjoined, with narcotic fomentations, and injections may be given containing twenty to twenty-five drops of laudanum. He is undecided in reference to the employment of anæsthetics, only using them in extreme cases, and preferring to them the hypodermic injection of morphia or atropia. Camphor, musk, castor, and ammonia, are beneficial in various cases, and he has seen benefit result from the introduction of a hysterometer, which acts by allowing the free escape of the

blood, and removing the spasmodic contraction of the orifices. In hysterical cases frequently repeated purges of a saline character are indicated, especially by means of the waters of Seidlitz, Püllna, and Birmenstorf; the iodide and bromide of potassium, conium, and the so-called resolvent waters of Vichy, Ems, and Carlsbad, are also serviceable with local depletion. Should, however, as is sometimes the case, atony of the generative organs be present, emmenagogues and cold baths should be taken, vesication of the neck, the direct application of iodine. He appears to consider the treatment of electricity to be not without danger. (*Dictionnaire de Médecine et de Chirurgie*, t. xii. 1870.)

Therapeutic Value of Veratrum Viride.—A paper appears by Dr. Hadlock in the *Medical and Surgical Reporter*, in which the action of this drug is fully discussed. According to his observation, its primary action is on the heart, as appears from its controlling influence on the pulse. In large doses it produces nausea and vomiting, and other symptoms make their appearance, the system becoming completely relaxed, with free perspiration and a pale cool surface. Occasionally the symptoms are more alarming; extreme pallor occurring, with occasional syncope, which is generally brought on from rising suddenly from the recumbent position. The symptoms of globus hystericus are sometimes present, but very rarely, in nervous females. No evidence was obtained of its primary action on the nervous centres, as evinced by drowsiness, stupor, coma, or delirium, nor any effects on the kidneys or bowels. Opium and its salts act very happily as an antidote, relieving any of the above symptoms when they become alarming. Veratrum appears, he thinks, to be indicated in all cases where there is determination of blood, or congestions either local or general. With this remedy the heart's action can be kept under perfect control, allowing it almost any number of beats consistent with life; and this may be continued for days without that prostration supervening which so many appear to apprehend. In all febrile affections it is used to very great advantage, especially in those whose osteology is obscure, and those occurring in children from derangements of the liver, stomach, bowels, &c. He usually gives a cathartic, and then begins with small doses of the veratrum, and, as soon as the pulse is reduced and the surface cooled, regulates the dose till the system reacts and resumes its healthy tone. He has found it of great service in continued or typhoid fevers, in equalizing the circulation, and thereby preventing local congestions as well as in allaying febrile excitement. He tried it with success in a case of puerperal convulsions, and with equal benefit in a case of disease of

the heart with rapid action and intermittent beats. The preparation employed was the tincture, and the dose four or five drops. (*Medical and Surgical Reporter*, No. 8, 1870.)

The Treatment of Delirium Tremens by Hydrate of Chloral.—Dr. George Balfour, of Edinburgh, comments upon the change which, within the last five-and-twenty years, has come over our mode of treating delirium tremens. Formerly, under the influence of the dogma that the patient must sleep or die, the formula in vogue at the Edinburgh Infirmary was:—Tinct. opii, ʒj; tinct. hyoscyami, ʒij; spt. communis, ʒj; taken at intervals till sleep was induced: and there can be no doubt that this treatment was most positively injurious in all but the most wary hands, and only kept its ground by being less hurtful than the indiscriminate practice of blood-letting which immediately preceded it. Subsequently, the expectant treatment recommended by Dr. Ware was largely employed, which, though less positively injurious, presented special risks of its own. With the introduction of the bromide of potassium began a new era in the treatment of this disease, its use for from twelve to twenty-four hours being sufficient to induce refreshing sleep and a speedy convalescence. The dose required in some instances, however, was large (half a drachm), and required to be frequently administered, even as often as every hour, till ten or more doses were given, before it took effect. This was always troublesome; and having had experience of the good effects of the hydrate of chloral in other affections, Dr. Balfour determined to give it a fair trial. The first case of delirium tremens treated by it was one of maniacal ferocity, and had been under treatment for three days. Two doses of hydrate of chloral of thirty grains each, with an interval of an hour between them, sufficed to induce refreshing sleep and to restore the patient to health. Dr. Balfour records five other cases of varying degrees of severity, in all of which most satisfactory results were obtained. (*Edin. Med. and Surg. Journal*, May 1870.)

Cold Water Treatment of Typhus Fever.—Dr. Ziemssen and Prof. Immermann give the results of their experience derived from the hospital at Erlangen. They lay great stress on the necessity of carefully studying the daily curve of temperature in typhus, and base their observations on the results of hourly registration. From inquiries extending over 120 days, they find the maximum of daily fluctuation to occur from 4 P.M. to 7 P.M., and generally between 5 and 6 P.M. It occurred at the latter period in one-third of all the observations. The minimum occurred at about 6 to 8 A.M. When a double daily curve was present, the second maximum occurred between 12 and 2 P.M. The whole number of cases under observation

amounted to 199, of whom 62 were treated with cold water. They consider a depression of 2° C. in the rectum, lasting for an hour, to represent a positive antipyretic effect; but when less marked, or lasting for a shorter term, as a negative effect. After the administration of 691 baths, a positive effect was observed in no less than 97·5 per cent. of all the cases. The effects produced by the baths augmented as the disease progressed, and the depression of temperature was particularly well marked on the fourteenth and twenty-first days. The protraction of the action of the bath was of good augury. Its action was least marked at the commencement of the daily exacerbation, and is prolonged as the period of daily maximum of temperature is approximated, when it is most marked, or between 6 and 7 P.M. They consider their experiments establish the facts that the hydropathic plan shortens the duration of typhus; and that when methodically applied it diminishes the mortality, though, if done irregularly and imperfectly, it exerts no influence at all upon the course or duration of the disease. (*Med. Chir. Rundschau*, 1870, Heft i.)

Sedative Action of Calomel in Disease.—Dr. Frederiek Lente recalls attention to an old and now generally neglected mode of administering calomel, in which, instead of small doses, a *scruple* of the drug or more is given at once. Of late years he remarks a dread of these potent doses spread itself over the minds of the profession, and the smaller doses were again substituted. Thus ptyalism was induced before any other manifest effect on the system was observed, and finally this manifestation of its absorption into and contamination of the blood came to be generally recognized as necessary; in fact, as *the means* of ridding the system of the prevailing disease, a most unfortunate and fatal deduction. The diseases in which Dr. Lente has chiefly employed calomel in these heroic doses are, first, *epidemic dysentery*, in which, as soon as called in, and whilst the patient was suffering pain in belly, tenderness on pressure, distressing tenesmus and bloody stools, a scruple of calomel was given, which produced cessation of pain within an hour. In a few cases constipation requiring castor-oil occurred. He now thinks that for adults half-drachm doses are safer and less likely to salivate. Secondly, in *membranous croup*, in which disease he regards it as a specific when given in full doses and aided by such appliances as will keep at bay the urgent danger, while the calomel is acting. Thirdly, in *cholera*, both of the milder and Asiatic form. In all these cases he thinks its action is that of a sedative, its initial if not its principal influence being due to a tranquillizing action on the ganglionic system of nerves, as evidenced by the promptitude and character of its effect. This essay is one of

considerable value and interest. (*New York Medical Journal*, March 1870.)

Sir James Simpson on Chloral.—In the course of a debate on the uses of this remedy, Sir James remarked that there are two kinds of the drug in the market, a cheap sort and a dearer sort, and only the best should be trusted to. In an experiment made on himself, when suffering from a feverish attack, he fell asleep before he had read the second page of a book, and did not wake for many hours, and then without bad effects. He had found it produced nausea in some people, and one of his patients had averted this effect by taking it with lemon-juice. In a case in which it was employed by subcutaneous injection, it produced sloughing. He thought it might be administered by suppositories or pessaries. He had not found it to be constipating. In the previous meeting, Dr. Milne had read a case where a loud noise occurring at the time of labour induced convulsions, which recurred after the birth of the child, and when a drachm of the hydrate threw the patient into a heavy sleep, from which she awoke convalescent. (*Edinburgh Medical and Surgical Journal*, May 1870.)

We observe in the last number of the *Imparziale* a vigorous attack upon the practice of circumcision, from the pen of Dr. Sonsino, who is of opinion that the advantages obtained in a hygienic point of view from the indiscriminate performance of circumcision are not sufficient to compensate for the ill effects that may ensue; that the principles of medical ethics do not allow of its performance as a prophylactic against venereal affection; and that as a religious rite it is deserving of condemnation. (*L'Imparziale*, No. 8, 1870.)

Soluble Saccharate of Iron as an Antidote to Arsenic.—The value of this preparation, which was long ago recommended by Bunsen and Berthold in poisoning by arsenic, has recently been demonstrated in a case recorded by Dr. H. Köhler. Its efficacy depends on its precipitating the arsenic in the form of insoluble arseniate of iron. The patient was 18 years of age, healthy and strong. He mixed a large quantity of arsenic with a little water, and after exposing the liquid to the sun for an hour, drank a considerable portion. About 15 grammes of the arsenic remained at the bottom of the vessel, but it was calculated he must have swallowed from 30 to 45 grains of the poison. An hour afterwards there were retching and vomiting, with violent pain in the belly, and great thirst; skin cool, pulse 104, respiration 16. Some sour milk had been previously taken. The saccharate of iron was now given, in doses of a teaspoonful. Lemonade was permitted to assuage the thirst, and the abdomen

was rubbed with a liniment, containing hyoseyanus and chloroform. The saccharate was repeated at intervals of an hour. Towards the evening improvement took place; copious yellow evacuations occurred. The urine discharged was acid, moderate in quantity, and contained no arsenic. The patient slept well the same night, and was convalescent on the following day. (*Berlin klin. Wochenschrift*, Nos. 35 and 36, 1869.)

Treatment of Gangrene of the Penis.—A good paper on this subject appears in the *Archives de Médecine*, from the pen of Dr. Demarquay, who observes that at first sight the therapeutics of this disease appear only to merit secondary consideration, since the line of treatment to be adopted by the surgeon is so obvious. Nevertheless, authorities are by no means in accord with one another in regard to it. Essentially, however, it consists in preventing its invasion when imminent; in arresting its progress when it has commenced; and, finally, of removing the affected part altogether when it is confirmed. The first of these indications is to be fulfilled by favouring the circulation of the blood as well as of the lymph, to which end scarifications more or less deep should be practised, by which the tumefied tissues are released from pressure, and the formation of phlyctenulæ and islets of sphacelus are prevented. Should the flow of blood be so abundant as to be attended with danger, the wound should be plugged and pressure applied. General blood-letting is occasionally, though rarely, indicated. The administration of febrifuge drinks is always indicated. Attention to the cause of the imminent gangrene will enable the intelligent surgeon in some instances to prevent its occurrence. Thus, in one instance, Bourgeois did not hesitate to cut away a portion of the corona, when it constituted an invincible obstacle to the return of the constricted prepuce. The patient recovered with some eschars of the prepuce, and of the dorsum penis, in two months, though otherwise he might have lost the whole organ. When it has once fairly commenced, the application of the actual cautery is indicated. He records a case in which a young man, aged 24, came under his care with chancre complicated with gangrene of the penis. A slight cauterization stopped the progress of the gangrene, and twelve days afterwards he was well. Arsenic was formerly considered useful, but is now neglected, and in its place the local application of citric acid is largely employed. This acid limits the progress of the gangrene, detaches the eschars, and converts the gangrenous into a simple wound which rapidly heals. When all these means fail and the gangrene still progresses, it only remains to remove the sphacelated part, but on this point opinions are by no means unanimous. Galen and Paré practised it freely, and lately M. Pétrequin, of Lyons, has

also adopted it. M. Demarquay, however, is not in favour of the adoption of this mode of treatment, for when it is limited to the skin of the penis or scrotum, the operation is superfluous; and when also it is produced by some external cause, the point where the gangrene will stop can be almost always predicated, whilst if produced by a constitutional condition, the wound made by the amputating knife is as likely to slough as the tissues in their natural state, and the treatment must therefore be constitutional. Finally, he refers to the camphorated creosote which has been recommended by M. Lavit, and the application of which has been followed by a good result. (*Archives Générales de Médecine*, May 1870.)

On the Local Treatment of Gastric Disease.—Dr. Theodor Jürgensen, of Kiel, contributes a paper to the *Deutsches Archiv* on this subject, remarking that the suggestion was originally due to Küssmaul, who adopted the pump constructed by Wyman, which has various disadvantages. Professor Bartel, of Frankfort, introduced this mode of treatment into his hospital, but not having a Wyman's pump, his assistant physician, Dr. Schorer, improvised a syphon pump, and M. Jürgensen has found that the pump may be dispensed with, the stomach being washed out and emptied on the principle of the syphon alone. It is only requisite to introduce a sound into the stomach, and attach its upper end with a piece of india-rubber tubing to the short arm of a glass syphon, the other end of which has a long portion of tubing attached to it. The patient being told to cough, or to make an effort at vomiting, the instrument, supposing the stomach to have been filled with fluid, immediately begins to play, and continues to act till the contents of the stomach are evacuated. By reversing the conditions, on the other hand, the stomach can be filled. In introducing the sound the mouth should be kept wide open, and as much saliva is usually secreted, the head should be bent forwards and the fluid allowed to flow away. No violence should be used. The washing out of the stomach with alkaline acid or spring water should be performed daily in the morning whilst the patient is fasting, and continued till the water flows out from the syphon quite clear. (*Deutsches Archiv für klinische Medizin*, 1870, Band ii. Heft ii.)

A western chemist has discovered a remedy for the trichina. It is nitro-glycerine, inserted either into the hog or the eater of pork, and then exploded.

Notes and Queries.

DEPARTMENT OF NEW INVENTIONS.

ANALYSES OF VARIOUS SAMPLES OF POTASSIUM BROMIDE (*continued from* p. 318).—Five of the seven samples contained bromide, chloride, and iodide of potassium; two of them (Nos. VIII. and XIII.) were free from iodide. They all contain sulphate of potassium and sodium; and all, with the exception of two (Nos. X. and XIII.), contain also carbonate of potassium, the sulphate forming, as in the former samples, the greater part of the amounts given in the table under the heading of “other impurities.” Two of them (Nos. IX. and XII.) contain traces of bromate. No other impurities were found in any of the samples.

Particulars of the Samples analysed.

No. VII. From P. Bolton, 251, Gray's Inn Road.—White, moderately large opaque crystals, dry. Contains slight traces of carbonate of potassium, and strong traces of sulphate of potassium and sodium.

No. VIII. From E. Voile and Co. 51, Judd Street, Euston Road, W.C.—White, moderately large crystals, dry. Contains slight traces of carbonate of potassium, and of sulphate of potassium and sodium; is free from iodide and bromate.

No. IX. From Auguste le Maout, 57, Princes Street, Leicester Square.—White, moderately large crystals, dry. Contains slight traces of carbonate and sulphate of potassium and sodium; traces of bromate and iodide.

No. X. From John Carr, 171, High Holborn.—White, very large, some opaque, some translucent, dry. Contains only traces of sulphate of potassium.

No. XI. From S. Chaplin, 11, Tothill Street, Westminster.—Slightly yellow, large crystals, dry. Contains strong traces of carbonate, and slight traces of sulphate of potassium and sodium; minute traces of iodide; no bromate.

No. XII. From H. B. Spink, 2, Marsham Street, Westminster, S.W.—White, small crystals, dry. Contains traces of carbonate,

and sulphate of potassium and sodium; traces of iodide and 0.0015 per cent. of bromate of potassium.

No. XIII. From Fallowfield and Co., 36, Lower Marsh, Lambeth.—Slightly yellow, moderately large crystals, dry. Contains traces of sulphate of potassium and sodium; no iodate or bromate.

No.	POTASSIUM.				Other impurities.
	Moisture.	Bromide.	Chloride.	Iodide.	
VII.	0.42	90.92	5.21	0.053	3.397
VIII.	0.85	91.43	4.38	0.000	3.350
IX.	0.75	89.84	8.06	0.026	1.324
X.	0.88	89.26	7.83	0.061	1.969
XI.	0.85	95.12	2.65	trace	1.380
XII.	1.04	90.87	5.14	0.031	2.919
XIII.	0.86	94.98	2.50	0.000	1.660

THE SUBCUTANEOUS PNEUMATIC ASPIRATOR.—An apparatus invented by Dr. Dieulafoy, and manufactured by Charrière, in Paris, and Weiss in London, promises to prove very useful, both for the diagnosis and treatment of collections of fluid, more especially in serous cavities. It consists of a glass pump-syringe, on the stomach-pump principle, but with an arrangement by which a vacuum can be created in the cylinder, which screws on to the perforating trocar. The bottom tap being opened when the (fine) exploring trocar reaches the cavity, the fluid rushes into the exhausted syringe, and we at once perceive its character. In a doubtful case, we use first an extremely fine trocar for diagnosis; if we elect to evacuate the fluid, we substitute for this a trocar of larger size, readjust the exhausted syringe, and by repeated manipulations extract the fluid without allowing the entrance of the least quantity of air to the cavity. The instrument resembles, in many respects, that of Dr. Bowditch.

A NEW CONSTANT BATTERY.—Mr. Pratt has submitted to us some new constant batteries made by Stöhrer (modified Bunsen's), which will probably prove very useful in practice. As yet we have only tested one of these batteries, a 20-celled one, and this only for one purpose, namely, the treatment of neuralgia. For this purpose the battery is thoroughly effective, producing all the effects which can be obtained from the constant current. We had occasion to try it twice in the same day—upon our own person, and upon that of a patient; the current from 10 cells directed upon the branches of the trigeminal nerve in each

instance arrested severe pain in a few minutes. The characteristic galvanic flash and galvanic taste were produced in mild degree. The battery, being of zinc and carbon, is handy and gives little trouble.

CORRESPONDENCE.

BROMAL HYDRATE.—We have received several inquiries from correspondents as to the dose and mode of application of this new drug, which Liebreich, it appears, has been experimenting upon. We are in the awkward position of not being able to answer these queries, which is the more provoking as a specimen of the drug has come into our hands, and we are unable to commence experiments for want of preliminary information. We shall be obliged to any one who will inform us whether any account of the matter has yet been published in the German or French papers.

THE DEGREE OF IMPURITY OF COMMERCIAL BROMIDE OF POTASSIUM.—A correspondent, "M.D.," directs our attention to the discrepancy between the results of our analytical research on this subject, and one published in the *Lancet* by Dr. A. E. Davies. According to the latter analysis, the impurities of bromide as sold in the shops are far larger than any signalized in our analysis in the *Practitioner* for May; and one of the items of impurity, *bromate of potash*, is reported by Dr. Davies to be present in quantities which would be likely to produce most serious and mischievous effects. In our May series of analyses nothing of the kind was found, and our correspondent will observe that in the present number we publish fresh analyses of samples taken from shops even of a comparatively humble class, yet the total impurities observed are not large, and bromate never figures as more than a "trace." We cannot quite understand how Dr. Davies could have had such bad luck with the tradesmen he applied to, as our own samples were chosen quite promiscuously over a very wide field; but we think he certainly ought to publish the names of the delinquents.

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¹ Any of the foreign works may be procured by application to Williams & Norgate, of Henrietta Street, Covent Garden, W.C. ; or Messrs. Dulau, of Soho Square, W.C.

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